USDA-APHIS-Animal Care

ANIMAL WELFARE COMPLAINT

Complaint No.	Date Entered:	Processed By:
AC22-0282	February 11, 2022	Sean Rehurek

Referred To:	Reply Due:
KATHLEEN GARLAND	March 13, 2022

Facility or Person Complaint Filed Against

Name:	Customer No.:	License No.:
NEURALINK	507904	

Address:	Email Address:
35640 Fremont Blvd #629	

City:	State:	Phone No.:
FREMONT	CA	(b) (6), (b) (7)(C)

Complainant Information

Name:	Organization:
(b) (6), (b) (7)(C), (b) (7)(D)	(b) (6), (b) (7)(C), (b) (7)(D)

Address:	Email Address:
	(b) (6), (b) (7)(C), (b) (7)(D)

City:	State:	Phone No.:

How was the Complaint received?
Email

Details of Complaint:
See attached.

Results:
Although Neuralink personnel were involved in these studies, all studies were done under UC Davis' USDA registration, not under Neuralink's. All studies were conducted under the purview of UC Davis' Institutional Animal Care and Use Committee and clinical veterinary staff. Medical records for the 23 animals involved in the studies were reviewed, and the animals still under study were inspected. All animals received appropriate care, and activities were conducted in compliance of the Animal Welfare Act regulations.

Application Kit Provided:
Yes: No:

Inspector:	Date:
PAMELA SMITH	March 4, 2022
Reviewed By:	Date:
KATHLEEN GARLAND	March 9, 2022

USDA, APHIS, Animal Care

ANIMAL WELFARE COMPLAINT

Complaint No.	Date Entered	Received By
AC22-282	11-Feb-22	E Fausch

Referred To	Reply Due
Pamela Smith VMO	24-Mar-22

Facility or Person Complaint Filed Against

Name	Customer/License/Registration No.
Neuralink	507904 / 93-R-0586

Address
7400 Paseo Padre Parkway

City	State	Zip	Phone No
Fremont	CA	94536	(b) (6), (b) (7)(C)

Complainant

Name	Organization
(b) (6), (b) (7)(C), (b) (7)(D)	(b) (6), (b) (7)(C), (b) (7)(D)

Address
(b) (6), (b) (7)(C), (b) (7)(D)

	State	Zip	Phone No /Email address
(b) (6), (b) (7)(C), (b) (7)(D)		(b) (6), (b) (7)(C), (b) (7)(D)	(b) (6), (b) (7)(C), (b) (7)(D)

How was complaint received?

Details of Complaint: Complaint is regarding activities that occurred at UC Davis beginning in 2018 into 2020 involving Neuralink studies.

Results: Although Neuralink personnel were involved in these studies, all studies were done under UC Davis' USDA registration, not under Neuralink's. All studies were conducted under the purview of UC Davis' Institional Animal Care and Use Committee and clinical veterinary staff. Medical records for the 23 animals involved in the studies were reviewed, and the animals still under study were inspected. All animals received appropriate care, and activities were conducted in compliance of the Animal Welfare Act regulations.

Application packet provided? Yes ☐ No ☒

INSPECTOR	DATE
Dr. Pamela L Smith, Veterinary Medical Officer	4-Mar-22

REVIEWED BY	DATE
Dr. Kathleen M. Garland, Supervisory Animal Care Specialist	9-Mar-22

United States Department of Agriculture

Animal and Plant Health Inspection Service

Animal Care

Fort Collins Office
2150 Centre Avenue
Building B, 3W11
Fort Collins, CO 80526
Phone: 970-494-7478

February 11, 2022

(b) (6), (b) (7)(C), (b) (7)(D) [redacted]

Dear Complainant,

Thank you for your correspondence dated February 10, 2022. We are reviewing your concerns and assigned tracking number AC22-282. Please allow us enough time (30 to 60 days) to thoroughly look into your concerns. You may submit a request to the Animal and Plant Health Inspection Service (APHIS) Freedom of Information Act (FOIA) office to obtain any publicly available information regarding our review.

FOIA Requests can be submitted three ways:

1. Web Request Form: https://efoia-pal.usda.gov/App/Home.aspx
2. Fax: 301-734-5941
3. US Mail:
   USDA- APHIS- FOIA
   4700 River Road, Unit 50
   Riverdale, MD 20737

Should you have any questions regarding the APHIS FOIA process or need assistance using the Web Request Form **please contact the APHIS FOIA office at 301-851-4102**.

Animal Care is a program within the U.S. Department of Agriculture (USDA) that directs activities to ensure compliance with and enforcement of the Animal Welfare Act and the Horse Protection Act. Animal Care establishes standards of humane treatment for regulated animals and monitors and achieves compliance through inspections, enforcement, education, and cooperative efforts under the Acts.

Please be assured that we will look into your concern(s) and take appropriate action(s).

Thank you for your interest into the humane treatment of these animals.

Sincerely,

Elizabeth Goldentyer, D.V.M.
Deputy Administrator
USDA, APHIS, Animal Care

PhysiciansCommittee
for Responsible Medicine
PCRM.ORG
5100 Wisconsin Ave. NW, Suite 400 • Washington, DC 20016 • Tel: 202-686-2210 • Fax: 202-686-2216 • pcrm@pcrm.org

February 10, 2022

Robert Gibbens, DVM
Director, Animal Welfare Operations
USDA/APHIS/Animal Care
2150 Centre Ave.
Building B, Mailstop 3W11
Fort Collins, CO 80526-8117

Submitted by email: robert.m.gibbens@aphis.usda.gov

Re: Violations of the Animal Welfare Act at University of California, Davis (93-R-0433) and Neuralink (93-R-0586)

Dear Dr. Gibbens:

The Physicians Committee for Responsible Medicine (Physicians Committee) requests that the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA) investigate apparent egregious violations of the Animal Welfare Act related to the treatment of monkeys used in invasive brain experiments. These experiments were carried out pursuant to contractual agreements[1] between the University of California, Davis (UC Davis), and Neuralink, a private company founded by Elon Musk based in California. Both parties to these agreements are registered under the Animal Welfare Act as research facilities. Because these agreements allowed personnel from both Neuralink and UC Davis to have access to taxpayer-supported facilities and animals at the university, and because the animals were, at different points in time, both the property of UC Davis and the property of Neuralink, the Physicians Committee believes there is an overlapping of responsibility for the apparent violations outlined in this complaint. As a result, we are asking that *both* facilities be investigated, and, if violations are confirmed by your agency, that both registrants be cited.

Overview

Pursuant to California's state open records law, the Physicians Committee obtained animal use protocols and amendments, health records, surgical logs, necropsy reports, and other documents related to the use of monkeys in invasive brain experiments funded by Neuralink. These documents form the primary evidentiary basis for this complaint and the facts described herein.

In producing these documents, UC Davis refused to provide the actual animal identification numbers that it assigned to the monkeys used in the experiments, thereby making it impossible

[1] Exhibit A. University Services Agreements, Amendments, and related contracts between Neuralink and the Regents of the University of California (Bates stamp range UCD 0001-0029).

for the Physicians Committee or enforcement authorities to cross-reference the same animals in Animal Welfare Act inspection reports and Certificates of Veterinary Inspection. UC Davis instead produced a legend that correlated page ranges with specific animals.[2] This complaint uses these masked animal identification numbers. UC Davis also withheld the names and other identifiers for individuals involved in the incidents described below. These redactions and withholdings of identifiers of animals and individuals hampered the Physicians Committee's ability to fully track and identify violations of law. As a result, it is possible that the experiments resulted in more violations than those presented below.

The records reviewed by the Physicians Committee indicate that many, if not all, of the monkeys experienced extreme suffering as a result of inadequate animal care and the highly invasive experimental head implants during the experiments, which were performed in pursuit of developing what Neuralink and Elon Musk have publicly described as a "brain-machine interface." These highly invasive implants and their associated hardware, which are inserted in the brain after drilling holes in the animals' skulls, have produced recurring infections in the animals, significantly compromising their health, as well as the integrity of the research. Additionally, the records make clear that significant deviations occurred from the protocol approved by UC Davis's Institutional Animal Care and Use Committee (IACUC).[3] The Physicians Committee believes that the detailed facts outlined below make clear that the research facilities in question violated the following Animal Welfare Act regulations:

- 9 C.F.R. § 2.31(d)(1)(i): Procedures involving animals will avoid or minimize discomfort, distress, and pain to the animals.
- 9 C.F.R. § 2.31(e)(2): Proposed activities must contain a rationale for involving animals, and for the appropriateness of the species and number of animals to be used.
- 9 C.F.R. § 2.31(c)(7): The IACUC will review and approve, require modifications in, or withhold approval of proposed significant change regarding the care and use of animals in ongoing activities.
- 9 C.F.R. § 2.31(e)(4): Discomfort and pain to animals will be limited to that which is unavoidable for the conduct of scientifically valuable research, including provision for the use of analgesic and anesthetic.
- 9 C.F.R. § 2.31(d)(1)(ii): The IACUC shall ensure that the Principal Investigator (PI) has considered alternatives to procedures that may cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources.
- 9 C.F.R. § 2.33 (b)(3): Daily observations of all animals shall take place to assess their well-being and there shall be a mechanism of direct and frequent communication to the facility's attending veterinarian.
- 9 C.F.R. § 2.33(b)(4): The attending veterinarian shall provide guidance to personnel involved in the care and use of animals regarding anesthesia.
- 9 C.F.R. § 2.32(a): It shall be the responsibility of the research facility to ensure that all personnel involved in animal care, treatment, and use are qualified to perform their duties.

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[2] Exhibit B. October 8, 2021 email from (b) (6), (b) (7)(C) [redacted] for the University of California.
[3] Exhibit C. UC Davis Animal Use Protocol #21222 and approved amendments, "Development of a Large-Scale Brain-Machine Interface in Rhesus Macaques."

- 9 C.F.R. § 3.81(a): It shall be the responsibility of the research facility to develop, document, and follow an appropriate plan for environmental enhancement adequate to promote the psychological well-being of nonhuman primates.

Experimental Procedures

At least 23 rhesus macaque monkeys were used at UC Davis in a Neuralink-funded project titled "Development of a Large-Scale Brain-Machine Interface in Rhesus Macaques." According to the protocol, some monkeys used in this experiment underwent "multiple major survival surgical procedures" in which as many as 10 craniotomies were performed and electrodes implanted into the animals' brains. The monkeys also underwent "head fixation" using either a head-post implant or what the UC Davis deems "pillows" to keep the animal's head immobile during periods of "prolonged restraint." During recording sessions, monkeys assigned to survival procedures were also restrained to a chair for up to five hours per day. Experimenters state in their protocol that the monkeys "may be chair restrained multiple times in a single day" and that "[c]hair restraint may be performed every day, including weekends." Some monkeys assigned to the protocol also underwent terminal (fatal) procedures, including a "device explant."

Protocol Deviation

According to documents reviewed by the Physicians Committee, experimenters involved in this protocol unambiguously deviated from the approved protocol. Their deviation is outlined in detail in a narrative titled "Adverse Effect Amendment: Inadvertent Use of Drugs" submitted to the UC Davis IACUC.[4] The "lead surgeon" who was performing craniotomies and electrode implantation on a monkey on August 19, 2019, "had concerns about the void in between the two implants and applied Bioglue to fill the dead space." Later, a necropsy revealed that the monkey had Bioglue on the surface of his brain. There was no mention of Bioglue being applied in the surgical record for this procedure, indicating poor and possibly noncompliant recordkeeping by lab personnel.[5] Bioglue was never an approved substance for use in surgery in the approved protocol. Based on the date of the surgical procedure and other details about the condition of this animals, other records received by UC Davis indicate that this monkey was "Animal 8."[6]

Troublingly, it appears *this same protocol deviation* occurred earlier but *was never reported* to the UC Davis IACUC. According to a necropsy report dated September 13, 2018 for "Animal 21"[7] (an animal who suffered significant and deadly adverse effects from her electrode implantation—described in more detail below), pathologists observed that "Bioglue is covering and compressing a large area of the left cerebrum" and that an "acute neuronal necrosis" occurred in "the areas of bioglue." The negligence of UC Davis and Neuralink personnel to adhere to their approved protocol directly led to the extreme suffering and death of this animal nearly a year prior to "Animal 8," and yet the incident was apparently never reported to the

[4] Exhibit D. "Adverse Effect Amendment: Inadvertent Use of Drugs." Written by Principal Investigator John Morrison, dated August 29, 2019.
[5] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. The records for this surgery are located on page with the Bates stamp range UCD 0166-0167.
[6] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 8" are located on pages with the Bates stamp range UCD 0162-0172.
[7] Exhibit F. Final Necropsy Report, Report ID 65860, "Animal 21."

IACUC. This inexcusable unreported earlier violation set the stage for the future deviation of the same nature involving "Animal 8."

Animal Care Negligence

Documents reviewed by the Physicians Committee reveal a troubling pattern of monkeys suffering from chronic systemic infections resulting from their crude surgeries, indications that monkeys with implanted hardware were isolated from one another (despite a lack of an IACUC-approved deviation from social housing), and evidence that monkeys are suffering from extreme psychological distress. While records for all 23 monkeys reflect this pattern of extreme suffering and staff negligence, below is a brief summary of some of the most concerning evidence of suffering found in the UC Davis records for eight of the monkeys:

- **"Animal 4"**[8] was an 11-year-old macaque monkey who was killed in the Neuralink/UC Davis experiments in July 2018. Prior to being used in this fatal procedure, this monkey's records indicate that he or she was on anti-depressants and had chronic diarrhea and poor appetite. A note on the monkey's care logs indicate that in December 2017, staff was under the impression that the monkey was going to be used in a project with a "terminal endpoint" in "~1 month," however, the monkey lived an additional seven months at UC Davis. During these months, UC Davis staff frequently observed that this monkey was "lethargic" and "depressed," with repeated observations of liquid stool, poor appetite, "hunching," and "bloody diarrhea." These observations continued consistently until the animal was used in a deadly procedure on July 20, 2018.

- **"Animal 5"**[9] was a macaque monkey who was shipped from UC Davis to Neuralink's facility on October 1, 2020. Prior to this shipment, the monkey frequently changed cages at UC Davis, a known stressor for monkeys in laboratories. On September 6, 2019, UC Davis staff noted that this monkey had "patchy alopecia [hair loss] on arms [and] legs." On December 3, 2019, the monkey had "significant weight loss" which staff thought "could be related to recent relocations." Staff requested a behavioral assessment, but it isn't clear if this occurred. On January 21, 2020, staff "inadvertently" administered an anticonvulsant to this monkey.

- **"Animal 6"**[10] was a 6-year-old macaque monkey who was killed on January 16, 2019, as part of the "experimental design." On October 10, 2018, he or she underwent a highly invasive surgical procedure in which staff drilled holes in their skull and implanted electrodes in their brain. The implants "were placed using an investigational robot" and were then "attached to skull using titanium implant screws." Beginning in December 2018, the area around the monkey's head implant became infected, and lab staff had to frequently clean the implant, including by flushing with "copious amounts" of antibiotics. Staff noted that the skin was eroding near the "pillbox where the prongs were cut & the

[8] Exhibit D. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 4" are located on pages with the Bates stamp range UCD 0124-0132.
[9] Exhibit D. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 5" are located on pages with the Bates stamp range UCD 0133-0139.
[10] Exhibit D. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 6" are located on pages with the Bates stamp range UCD 0140-0156.

edges were sharp." At times, staff observed "serious discharge" from the infected area surrounding the implant. On January 14, 2019, staff noted that the implant was "showing through skin edges" and that it was bloody, due in part to the animal "picking" at it. Two days later, staff euthanized "Animal 6."

- **"Animal 10"**[11] was an 8-year-old macaque monkey who was shipped to Neuralink's facility on October 1, 2020. Prior to this shipment, records for "Animal 10" indicate that this monkey experienced repeated unspecified "traumas" to their body, causing lesions, erythema (reddened skin), as well as blood and "tissue" found in the bottom of his or her cage. The monkey was also reported to have "significant hair loss" and to be exhibiting self-mutilating behavior.

- **"Animal 11"**[12] was approximately 11 years old when he or she was killed in a terminal procedure at UC Davis on March 15, 2019. Prior to this procedure, the monkey had a cranial implant surgically placed inside his or her brain on December 3, 2018. Following this procedure, the implant became chronically infected. The monkey began to have a depressed appetite. In October 2018, UC Davis staff noted that the monkey was "missing multiple digits [on] both hands, [right] foot," possibly from self-mutilation or some other unspecified trauma. On December 18, 2018, staff decided to "prophylactically or conservatively start [antibiotic treatment]" for the monkey after observing that "the skin was eroded" surrounding the implant. In the following two months, there are frequent observations of the monkey having a bloody, infected head wound from the device experimenters attached to his or her skull. The monkey was prescribed several types of antibiotics during this time period. In January 2019, staff observed that the monkey had a "bloody head…dried blood around base at cranial implant."

- **"Animal 12"**[13] was approximately 7 years old when he or she underwent a craniotomy and electrode insertion procedure on July 17, 2018. Following this procedure, the monkey began to experience seizures, and staff prescribed an anticonvulsant. Over the next several days, "Animal 12" had severe clinical adverse effects following the implantation, had poor stool quality, was not eating, and had an eye infection. The records for this animal abruptly end on July 30, 2018.

- **"Animal 15"**[14] was a female macaque who was approximately 7 years old when she underwent a craniotomy and recording device implantation on December 17, 2018. Almost immediately after the animal recovered from the surgery, she began pulling and picking at her head implant. Lab staff noted that the area became infected and bloody. The monkey was observed "grooming & holding hands w/roommate through the cage" on December 19. The same day, she was observed laying down and possibly "head

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[11] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 10" are located on pages with the Bates stamp range UCD 0180-0201.
[12] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 11" are located on pages with the Bates stamp range UCD 0202-0244.
[13] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 12" are located on pages with the Bates stamp range UCD 0245-0264.
[14] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 15" are located on pages with the Bates stamp range UCD 0329-0364.

pressing." The animal was observed on December 21 to be "shivering & scratching." On December 28, the animal was observed to have a "stress response to some personnel coming into the room or close to her" and was prescribed anti-anxiety medication. For the next three months, the animal was intermittently given antibiotics as well as probiotics to try to address recurring infections, poor appetite, and liquid stool. The animal was ultimately euthanized on March 21, 2019. A necropsy report indicates that they found internal bleeding, "remnant electrode threads," and a cerebral cortex that was "focally tattered."

- **"Animal 21"**[15] was a 7-year-old female macaque who underwent an "electrode insertion survivability" procedure where "[e]lectrode implants were placed [in the monkey's brain] using investigational robotics" on September 10, 2018. The next two days, the monkey was observed repeatedly vomiting, gasping, "retching" and had "very little interaction with environment/observers." On September 11, animal care staff wrote that the animal had "weakness, esp in hind limb due to fatigue" and that they "suspect neuro signs." On September 13, the animal was observed to be pale, with yellow discharge from the implant, and there was vomit in the cage. Staff wrote that the monkey "appeared to collapse from exhaustion/fatigue." The animal was euthanized, and a necropsy was performed, which found multiple adverse conditions, including brain hemorrhage, "Bioglue" covering the brain, and "acute esophageal ulcers…likely due to vomiting."

Conclusion

The documents reviewed by the Physicians Committee reveal a systematic disregard for Animal Welfare Act regulations by UC Davis and Neuralink personnel. The carelessness by these facilities resulted in the suffering and death of several monkeys. We believe that this situation warrants a serious investigation by USDA. If our allegations are corroborated, we ask that USDA cite UC Davis and Neuralink for each noncompliance with federal regulations, and seek an assessment of the maximum civil penalty available per violation, pursuant to 7 U.S.C. § 2149(b).

The Physicians Committee appreciates your agency's dedication to enforcing the Animal Welfare Act and looks forward to hearing the results of any investigation. Should you have any additional questions, we can be reached at (b) (6), (b) (7)(C), (b) (7)(D) (b) (6), (b) (7)(C), (b) (7)(D)

Sincerely,

(b) (6), (b) (7)(C), (b) (7)(D)

(b) (6), (b) (7)(C), (b) (7)(D)

(b) (6), (b) (7)(C)

[15] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 8" are located on pages with the Bates stamp range UCD 0618-0645.

United States Department of Agriculture
Animal and Plant Health Inspection Service

PSMITH
2016090000770749 Insp_id

Inspection Report

NEURALINK
35640 Fremont Blvd #629
FREMONT, CA 94536

Customer ID: **507904**
Certificate: **93-R-0586**
Site: 001
NEURALINK

Type: FOCUSED INSPECTION
Date: 03-MAR-2022

This was a focused inspection related to specific animals used previously at another facility under a different registration.

No non-compliant items were identified during this inspection.

This inspection and exit interview were conducted with facility representatives.

Additional Inspectors:

William Campbell, VETERINARY MEDICAL OFFICER

Prepared By: PAMELA SMITH
USDA, APHIS, Animal Care
Title: VETERINARY MEDICAL OFFICER
Date: 04-MAR-2022

Received by Title: Attending Veterinarian
Date: 04-MAR-2022

23-01594_000010

United States Department of Agriculture
Animal and Plant Health Inspection Service

Customer: 507904
Inspection Date: 03-Mar-2022

Species Inspected

Cust No	Cert No	Site	Site Name	Inspection
507904	93-R-0586	001	NEURALINK	03-MAR-2022

Count	Scientific Name	Common Name
000012	*Macaca mulatta*	RHESUS MACAQUE
000012	**Total**	

From: noreply@aphis.usda.gov
To: APHIS-AnimalCare
Subject: USDA APHIS ANIMAL CARE - Animal Welfare Complaint Submission
Date: Wednesday, December 7, 2022 11:29:18 AM

Details of complaint:

- Name of USDA licensee/registrant:
- USDA license/registration number:
- City/State:San Francisco, CA
- Complaint details:I am filing a complaint against Elon Musk and his company, Neuralink, for experimenting on monkeys, pigs and perhaps other animals, by inserting microchips and threads into their brains. This practice has resulted in monkeys chewing their fingers off, several animals having to be euthanized and other disgusting results.

  This cruelty should not be allowed here. Please make him stop.

Submitted To:

Complaint Contact Information:

Can Contact Complainant: Yes

Name: (b) (6), (b) (7)(C), (b) (7)(D)
Organization:
Street Address: (b) (6), (b) (7)(C), (b) (7)(D)
Apt/Suite:
City / State / Zip (b) (6), (b) (7)(C), (b) (7)(D)
Phone Number:
Email: (b) (6), (b) (7)(C), (b) (7)(D)
Submitted on: Dec 7, 2022 6:29:14 PM UTC

United States Department of Agriculture

Animal and Plant Health Inspection Service

Animal Care

Fort Collins Office
2150 Centre Avenue
Building B, 3W11
Fort Collins, CO 80526
Phone: 970-494-7478

December 14, 2022

(b) (6), (b) (7)(C), (b) (7)(D) [redacted]

Dear Complainant,

Thank you for your correspondence dated December 7, 2022. We are reviewing your concerns and assigned tracking number AC23-0174. Please allow us enough time (30 to 60 days) to thoroughly look into your concerns. You may submit a request to the Animal and Plant Health Inspection Service (APHIS) Freedom of Information Act (FOIA) office to obtain any publicly available information regarding our review.

FOIA Requests can be submitted three ways:

1. Web Request Form: https://efoia-pal.usda.gov/App/Home.aspx
2. Fax: 301-734-5941
3. US Mail:
   USDA- APHIS- FOIA
   4700 River Road, Unit 50
   Riverdale, MD 20737

Should you have any questions regarding the APHIS FOIA process or need assistance using the Web Request Form **please contact the APHIS FOIA office at 301-851-4102**.

Animal Care is a program within the U.S. Department of Agriculture (USDA) that directs activities to ensure compliance with and enforcement of the Animal Welfare Act and the Horse Protection Act. Animal Care establishes standards of humane treatment for regulated animals and monitors and achieves compliance through inspections, enforcement, education, and cooperative efforts under the Acts.

Please be assured that we will look into your concern(s) and take appropriate action(s).

Thank you for your interest into the humane treatment of these animals.

Sincerely,

Elizabeth Goldentyer, D.V.M.
Deputy Administrator
USDA, APHIS, Animal Care

USDA-APHIS-Animal Care

ANIMAL WELFARE COMPLAINT

Complaint No.	Date Entered:	Processed By:
AC22-0377	March 4, 2022	Emily Fausch

Referred To:	Reply Due:
KATHLEEN GARLAND	April 3, 2022

Facility or Person Complaint Filed Against

Name:	Customer No.:	License No.:
UNIVERSITY OF CALIFORNIA- DAVIS	9192	

Address:	Email Address:
ONE SHIELDS AVE	

City:	State:	Phone No.:
Yolo	CA	(530) 752-2364

Complainant Information

Name:	Organization:
(b) (6), (b) (7)(C), (b) (7)(D) [redacted]	

Address:	Email Address:
	(b) (6), (b) (7)(C), (b) (7)(D) [redacted]

City:	State:	Phone No.:

How was the Complaint received?
Email

Details of Complaint:
see attached

Results:
Complaint judged not substantiated
Experimental Procedures:
The experimental procedures, including the multiple major survival surgeries (craniotomies) were scientifically justified in the applicable protocol and approved by the IACUC in accordance with 2.31(d)(1)(x)(A). The protocol and amendments regarding the use of prolonged restraint were also approved by the IACUC.
Regarding concerns about the use of Bioglue:
Animal 21 had surgery in accordance with the approved protocol at the time, including the use of Bioglue. In reviewing the animals records and necropsy of this animal on 13 September, 2018, following the identification that the bioglue may have contributed to the animals clinical deterioration, an amendment to the protocol discussed and approved by the IACUC discontinued the use of Bioglue on the protocol and added FDA approved cranial sealant.
“Animal 8” was used in a terminal procedure on 19 August 2019, although they reported as a “deviation” to the IACUC within 10 days, there was no animal welfare impact and they were in compliance with their approved protocol for use of cranial sealants in terminal procedures.
Animal Care Negligence
Animal Care Veterinary Medical Officers reviewed the approved amendments, protocols, sop’s, behavior pairing policy and medical/behavioral records for the 23 macaques identified in the complaint. The care of the animals was in accordance with the approved protocol and the potential

adverse impacts of the protocol approved by the IACUC covered the complications documented in the animals records.
The approved protocols identify chronic infection as a potential adverse effect of the percutaneous connectors, mitigating the impact through proper management. Possible significant adverse effects identified in the protocol also include brain tissue damage, swelling, seizures and complications from the hardware.
The IACUC approved protocol did not exempt these animals from pairing, food enrichment and cage enrichment provided in the environmental enhancement plan. A review of social housing records indicated that animals on project were socially housed if possible, with reasonable attempts made to find a compatible pair in compliance with the UCD Social housing of social species policy. The records reviewed indicated that UCD maintained non-human primates on this project in compatible pairs as much as possible, and all animals were housed together in project specific rooms, providing conspecifics in visual, auditory and olfactory range.
Animal 4 had a prior history of intermittent bloody diarrhea which continued while on protocol and maintained a stable weight within protocol standards and was not on antidepressants. The rest of the animals record indicates that the animal maintained weight within the parameters of the protocol, and adequate daily observations and veterinary care was provided for the intermittent diarrhea.
Animal 5 was pre-medicated, per the approved protocol for the procedure, but this particular animal was not a good surgical candidate that day, resulting in “inadvertent” administration of anti-convulsant as part of the premed protocol.
Animal 6 was utilized per the IACUC approved protocol for survival cranial implant surgery. The surgical site was closely monitored and provided appropriate veterinary care to manage the anticipated adverse effect of implant site infection until the animal was euthanized under the approved IACUC protocol.
Animal 10 was utilized in accordance with the protocol and continuously monitored by veterinary staff, appropriate and adequate veterinary care was provided as needed. Alopecia and minor trauma that healed by 2nd intention was noted multiple times in the animals record, and the episodic nature was documented.
Animal 11 was implanted in accordance with the protocol and provided adequate and appropriate veterinary care for an anticipated adverse effect of the protocol of cranial implant infection. This individual was noted to have digits missing on the pre-project physical exam on 19 October 2018, then had a cranial implant placed in accordance with the approved IACUC protocol, which became infected. The infection was treated appropriately with antibiotics and cleanings with close monitoring by the veterinary staff until the animal was scheduled for terminal surgery on 16 March 2019.
Animal 12 was implanted in accordance with the protocol and provided adequate and appropriate veterinary care for an anticipated adverse effect of the protocol of seizures and strokes. Animal 12 was noted to have a 30 second seizure post op and as approved in the protocol, the animal was treated for seizures, nutritionally supplemented, and monitored closely until the animal was euthanized as part of the project.
Animal 15 was implanted in accordance with the protocol and provided adequate and appropriate veterinary care for anticipated adverse effects of the protocol of tissue damage to the brain, intracranial hemorrhage, and neurological deficits.
Animal 21 was implanted in accordance with the protocol and provided adequate and appropriate veterinary care for an anticipated adverse effect of the protocol of neurological deficits and brain swelling and hemorrhage. Following surgery, the animal was closely monitored and the neurological decline was documented until the humane endpoint was reached according to the post op monitoring and the animal was medically euthanized.
We will continue to monitor this facility.

Application Kit Provided:
Yes: No:

USDA-APHIS-Animal Care

Inspector: KATHARINE FRANK	Date: March 21, 2022
Reviewed By: KATHLEEN GARLAND	Date: April 6, 2022

United States Department of Agriculture

Animal and Plant Health Inspection Service

Animal Care

Fort Collins Office
2150 Centre Avenue
Building B, 3W11
Fort Collins, CO 80526
Phone: 970-494-7478

March 4, 2022

(b) (6), (b) (7)(C), (b) (7)(D)
[redacted]

Dear Complainant,

Thank you for your correspondence dated February 10, 2022. We are reviewing your concerns and assigned tracking number AC22-377. Please allow us enough time (30 to 60 days) to thoroughly look into your concerns. You may submit a request to the Animal and Plant Health Inspection Service (APHIS) Freedom of Information Act (FOIA) office to obtain any publicly available information regarding our review.

FOIA Requests can be submitted three ways:

1. Web Request Form: https://efoia-pal.usda.gov/App/Home.aspx
2. Fax: 301-734-5941
3. US Mail:
   USDA- APHIS- FOIA
   4700 River Road, Unit 50
   Riverdale, MD 20737

Should you have any questions regarding the APHIS FOIA process or need assistance using the Web Request Form **please contact the APHIS FOIA office at 301-851-4102**.

Animal Care is a program within the U.S. Department of Agriculture (USDA) that directs activities to ensure compliance with and enforcement of the Animal Welfare Act and the Horse Protection Act. Animal Care establishes standards of humane treatment for regulated animals and monitors and achieves compliance through inspections, enforcement, education, and cooperative efforts under the Acts.

Please be assured that we will look into your concern(s) and take appropriate action(s).

Thank you for your interest into the humane treatment of these animals.

Sincerely,

Elizabeth Goldentyer, D.V.M.
Deputy Administrator
USDA, APHIS, Animal Care

PhysiciansCommittee
for Responsible Medicine
PCRM.ORG
5100 Wisconsin Ave. NW, Suite 400 • Washington, DC 20016 • Tel: 202-686-2210 • Fax: 202-686-2216 • pcrm@pcrm.org

February 10, 2022

Robert Gibbens, DVM
Director, Animal Welfare Operations
USDA/APHIS/Animal Care
2150 Centre Ave.
Building B, Mailstop 3W11
Fort Collins, CO 80526-8117

Submitted by email: robert.m.gibbens@aphis.usda.gov

Re: Violations of the Animal Welfare Act at University of California, Davis (93-R-0433) and Neuralink (93-R-0586)

Dear Dr. Gibbens:

The Physicians Committee for Responsible Medicine (Physicians Committee) requests that the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA) investigate apparent egregious violations of the Animal Welfare Act related to the treatment of monkeys used in invasive brain experiments. These experiments were carried out pursuant to contractual agreements[1] between the University of California, Davis (UC Davis), and Neuralink, a private company founded by Elon Musk based in California. Both parties to these agreements are registered under the Animal Welfare Act as research facilities. Because these agreements allowed personnel from both Neuralink and UC Davis to have access to taxpayer-supported facilities and animals at the university, and because the animals were, at different points in time, both the property of UC Davis and the property of Neuralink, the Physicians Committee believes there is an overlapping of responsibility for the apparent violations outlined in this complaint. As a result, we are asking that *both* facilities be investigated, and, if violations are confirmed by your agency, that both registrants be cited.

Overview

Pursuant to California's state open records law, the Physicians Committee obtained animal use protocols and amendments, health records, surgical logs, necropsy reports, and other documents related to the use of monkeys in invasive brain experiments funded by Neuralink. These documents form the primary evidentiary basis for this complaint and the facts described herein.

In producing these documents, UC Davis refused to provide the actual animal identification numbers that it assigned to the monkeys used in the experiments, thereby making it impossible

[1] Exhibit A. University Services Agreements, Amendments, and related contracts between Neuralink and the Regents of the University of California (Bates stamp range UCD 0001-0029).

for the Physicians Committee or enforcement authorities to cross-reference the same animals in Animal Welfare Act inspection reports and Certificates of Veterinary Inspection. UC Davis instead produced a legend that correlated page ranges with specific animals.[2] This complaint uses these masked animal identification numbers. UC Davis also withheld the names and other identifiers for individuals involved in the incidents described below. These redactions and withholdings of identifiers of animals and individuals hampered the Physicians Committee's ability to fully track and identify violations of law. As a result, it is possible that the experiments resulted in more violations than those presented below.

The records reviewed by the Physicians Committee indicate that many, if not all, of the monkeys experienced extreme suffering as a result of inadequate animal care and the highly invasive experimental head implants during the experiments, which were performed in pursuit of developing what Neuralink and Elon Musk have publicly described as a "brain-machine interface." These highly invasive implants and their associated hardware, which are inserted in the brain after drilling holes in the animals' skulls, have produced recurring infections in the animals, significantly compromising their health, as well as the integrity of the research. Additionally, the records make clear that significant deviations occurred from the protocol approved by UC Davis's Institutional Animal Care and Use Committee (IACUC).[3] The Physicians Committee believes that the detailed facts outlined below make clear that the research facilities in question violated the following Animal Welfare Act regulations:

- 9 C.F.R. § 2.31(d)(1)(i): Procedures involving animals will avoid or minimize discomfort, distress, and pain to the animals.
- 9 C.F.R. § 2.31(e)(2): Proposed activities must contain a rationale for involving animals, and for the appropriateness of the species and number of animals to be used.
- 9 C.F.R. § 2.31(c)(7): The IACUC will review and approve, require modifications in, or withhold approval of proposed significant change regarding the care and use of animals in ongoing activities.
- 9 C.F.R. § 2.31(e)(4): Discomfort and pain to animals will be limited to that which is unavoidable for the conduct of scientifically valuable research, including provision for the use of analgesic and anesthetic.
- 9 C.F.R. § 2.31(d)(1)(ii): The IACUC shall ensure that the Principal Investigator (PI) has considered alternatives to procedures that may cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources.
- 9 C.F.R. § 2.33 (b)(3): Daily observations of all animals shall take place to assess their well-being and there shall be a mechanism of direct and frequent communication to the facility's attending veterinarian.
- 9 C.F.R. § 2.33(b)(4): The attending veterinarian shall provide guidance to personnel involved in the care and use of animals regarding anesthesia.
- 9 C.F.R. § 2.32(a): It shall be the responsibility of the research facility to ensure that all personnel involved in animal care, treatment, and use are qualified to perform their duties.

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[2] Exhibit B. October 8, 2021 email from (b) (6), (b) (7)(C) [redacted] or the University of California.
[3] Exhibit C. UC Davis Animal Use Protocol #21222 and approved amendments, "Development of a Large-Scale Brain-Machine Interface in Rhesus Macaques."

- 9 C.F.R. § 3.81(a): It shall be the responsibility of the research facility to develop, document, and follow an appropriate plan for environmental enhancement adequate to promote the psychological well-being of nonhuman primates.

Experimental Procedures

At least 23 rhesus macaque monkeys were used at UC Davis in a Neuralink-funded project titled "Development of a Large-Scale Brain-Machine Interface in Rhesus Macaques." According to the protocol, some monkeys used in this experiment underwent "multiple major survival surgical procedures" in which as many as 10 craniotomies were performed and electrodes implanted into the animals' brains. The monkeys also underwent "head fixation" using either a head-post implant or what the UC Davis deems "pillows" to keep the animal's head immobile during periods of "prolonged restraint." During recording sessions, monkeys assigned to survival procedures were also restrained to a chair for up to five hours per day. Experimenters state in their protocol that the monkeys "may be chair restrained multiple times in a single day" and that "[c]hair restraint may be performed every day, including weekends." Some monkeys assigned to the protocol also underwent terminal (fatal) procedures, including a "device explant."

Protocol Deviation

According to documents reviewed by the Physicians Committee, experimenters involved in this protocol unambiguously deviated from the approved protocol. Their deviation is outlined in detail in a narrative titled "Adverse Effect Amendment: Inadvertent Use of Drugs" submitted to the UC Davis IACUC.[4] The "lead surgeon" who was performing craniotomies and electrode implantation on a monkey on August 19, 2019, "had concerns about the void in between the two implants and applied Bioglue to fill the dead space." Later, a necropsy revealed that the monkey had Bioglue on the surface of his brain. There was no mention of Bioglue being applied in the surgical record for this procedure, indicating poor and possibly noncompliant recordkeeping by lab personnel.[5] Bioglue was never an approved substance for use in surgery in the approved protocol. Based on the date of the surgical procedure and other details about the condition of this animals, other records received by UC Davis indicate that this monkey was "Animal 8."[6]

Troublingly, it appears *this same protocol deviation* occurred earlier but *was never reported* to the UC Davis IACUC. According to a necropsy report dated September 13, 2018 for "Animal 21"[7] (an animal who suffered significant and deadly adverse effects from her electrode implantation—described in more detail below), pathologists observed that "Bioglue is covering and compressing a large area of the left cerebrum" and that an "acute neuronal necrosis" occurred in "the areas of bioglue." The negligence of UC Davis and Neuralink personnel to adhere to their approved protocol directly led to the extreme suffering and death of this animal nearly a year prior to "Animal 8," and yet the incident was apparently never reported to the

[4] Exhibit D. "Adverse Effect Amendment: Inadvertent Use of Drugs." Written by Principal Investigator John Morrison, dated August 29, 2019.
[5] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. The records for this surgery are located on page with the Bates stamp range UCD 0166-0167.
[6] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 8" are located on pages with the Bates stamp range UCD 0162-0172.
[7] Exhibit F. Final Necropsy Report, Report ID 65860, "Animal 21."

IACUC. This inexcusable unreported earlier violation set the stage for the future deviation of the same nature involving "Animal 8."

Animal Care Negligence

Documents reviewed by the Physicians Committee reveal a troubling pattern of monkeys suffering from chronic systemic infections resulting from their crude surgeries, indications that monkeys with implanted hardware were isolated from one another (despite a lack of an IACUC-approved deviation from social housing), and evidence that monkeys are suffering from extreme psychological distress. While records for all 23 monkeys reflect this pattern of extreme suffering and staff negligence, below is a brief summary of some of the most concerning evidence of suffering found in the UC Davis records for eight of the monkeys:

- **"Animal 4"**[8] was an 11-year-old macaque monkey who was killed in the Neuralink/UC Davis experiments in July 2018. Prior to being used in this fatal procedure, this monkey's records indicate that he or she was on anti-depressants and had chronic diarrhea and poor appetite. A note on the monkey's care logs indicate that in December 2017, staff was under the impression that the monkey was going to be used in a project with a "terminal endpoint" in "~1 month," however, the monkey lived an additional seven months at UC Davis. During these months, UC Davis staff frequently observed that this monkey was "lethargic" and "depressed," with repeated observations of liquid stool, poor appetite, "hunching," and "bloody diarrhea." These observations continued consistently until the animal was used in a deadly procedure on July 20, 2018.

- **"Animal 5"**[9] was a macaque monkey who was shipped from UC Davis to Neuralink's facility on October 1, 2020. Prior to this shipment, the monkey frequently changed cages at UC Davis, a known stressor for monkeys in laboratories. On September 6, 2019, UC Davis staff noted that this monkey had "patchy alopecia [hair loss] on arms [and] legs." On December 3, 2019, the monkey had "significant weight loss" which staff thought "could be related to recent relocations." Staff requested a behavioral assessment, but it isn't clear if this occurred. On January 21, 2020, staff "inadvertently" administered an anticonvulsant to this monkey.

- **"Animal 6"**[10] was a 6-year-old macaque monkey who was killed on January 16, 2019, as part of the "experimental design." On October 10, 2018, he or she underwent a highly invasive surgical procedure in which staff drilled holes in their skull and implanted electrodes in their brain. The implants "were placed using an investigational robot" and were then "attached to skull using titanium implant screws." Beginning in December 2018, the area around the monkey's head implant became infected, and lab staff had to frequently clean the implant, including by flushing with "copious amounts" of antibiotics. Staff noted that the skin was eroding near the "pillbox where the prongs were cut & the

[8] Exhibit D. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 4" are located on pages with the Bates stamp range UCD 0124-0132.
[9] Exhibit D. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 5" are located on pages with the Bates stamp range UCD 0133-0139.
[10] Exhibit D. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 6" are located on pages with the Bates stamp range UCD 0140-0156.

edges were sharp." At times, staff observed "serious discharge" from the infected area surrounding the implant. On January 14, 2019, staff noted that the implant was "showing through skin edges" and that it was bloody, due in part to the animal "picking" at it. Two days later, staff euthanized "Animal 6."

- **"Animal 10"**[11] was an 8-year-old macaque monkey who was shipped to Neuralink's facility on October 1, 2020. Prior to this shipment, records for "Animal 10" indicate that this monkey experienced repeated unspecified "traumas" to their body, causing lesions, erythema (reddened skin), as well as blood and "tissue" found in the bottom of his or her cage. The monkey was also reported to have "significant hair loss" and to be exhibiting self-mutilating behavior.

- **"Animal 11"**[12] was approximately 11 years old when he or she was killed in a terminal procedure at UC Davis on March 15, 2019. Prior to this procedure, the monkey had a cranial implant surgically placed inside his or her brain on December 3, 2018. Following this procedure, the implant became chronically infected. The monkey began to have a depressed appetite. In October 2018, UC Davis staff noted that the monkey was "missing multiple digits [on] both hands, [right] foot," possibly from self-mutilation or some other unspecified trauma. On December 18, 2018, staff decided to "prophylactically or conservatively start [antibiotic treatment]" for the monkey after observing that "the skin was eroded" surrounding the implant. In the following two months, there are frequent observations of the monkey having a bloody, infected head wound from the device experimenters attached to his or her skull. The monkey was prescribed several types of antibiotics during this time period. In January 2019, staff observed that the monkey had a "bloody head…dried blood around base at cranial implant."

- **"Animal 12"**[13] was approximately 7 years old when he or she underwent a craniotomy and electrode insertion procedure on July 17, 2018. Following this procedure, the monkey began to experience seizures, and staff prescribed an anticonvulsant. Over the next several days, "Animal 12" had severe clinical adverse effects following the implantation, had poor stool quality, was not eating, and had an eye infection. The records for this animal abruptly end on July 30, 2018.

- **"Animal 15"**[14] was a female macaque who was approximately 7 years old when she underwent a craniotomy and recording device implantation on December 17, 2018. Almost immediately after the animal recovered from the surgery, she began pulling and picking at her head implant. Lab staff noted that the area became infected and bloody. The monkey was observed "grooming & holding hands w/roommate through the cage" on December 19. The same day, she was observed laying down and possibly "head

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[11] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 10" are located on pages with the Bates stamp range UCD 0180-0201.
[12] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 11" are located on pages with the Bates stamp range UCD 0202-0244.
[13] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 12" are located on pages with the Bates stamp range UCD 0245-0264.
[14] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 15" are located on pages with the Bates stamp range UCD 0329-0364.

pressing." The animal was observed on December 21 to be "shivering & scratching." On December 28, the animal was observed to have a "stress response to some personnel coming into the room or close to her" and was prescribed anti-anxiety medication. For the next three months, the animal was intermittently given antibiotics as well as probiotics to try to address recurring infections, poor appetite, and liquid stool. The animal was ultimately euthanized on March 21, 2019. A necropsy report indicates that they found internal bleeding, "remnant electrode threads," and a cerebral cortex that was "focally tattered."

- **"Animal 21"**[15] was a 7-year-old female macaque who underwent an "electrode insertion survivability" procedure where "[e]lectrode implants were placed [in the monkey's brain] using investigational robotics" on September 10, 2018. The next two days, the monkey was observed repeatedly vomiting, gasping, "retching" and had "very little interaction with environment/observers." On September 11, animal care staff wrote that the animal had "weakness, esp in hind limb due to fatigue" and that they "suspect neuro signs." On September 13, the animal was observed to be pale, with yellow discharge from the implant, and there was vomit in the cage. Staff wrote that the monkey "appeared to collapse from exhaustion/fatigue." The animal was euthanized, and a necropsy was performed, which found multiple adverse conditions, including brain hemorrhage, "Bioglue" covering the brain, and "acute esophageal ulcers…likely due to vomiting."

Conclusion

The documents reviewed by the Physicians Committee reveal a systematic disregard for Animal Welfare Act regulations by UC Davis and Neuralink personnel. The carelessness by these facilities resulted in the suffering and death of several monkeys. We believe that this situation warrants a serious investigation by USDA. If our allegations are corroborated, we ask that USDA cite UC Davis and Neuralink for each noncompliance with federal regulations, and seek an assessment of the maximum civil penalty available per violation, pursuant to 7 U.S.C. § 2149(b).

The Physicians Committee appreciates your agency's dedication to enforcing the Animal Welfare Act and looks forward to hearing the results of any investigation. Should you have any additional questions, we can be reached at [redacted] or [redacted]

Sincerely,

[redacted]

[redacted]

[redacted]

[15] Exhibit E. Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols. Records for "Animal 8" are located on pages with the Bates stamp range UCD 0618-0645.

Exhibit A

University Services Agreements, Amendments, and Related Contracts Between the Regents of the University of California and Neuralink

CONFIDENTIAL DISCLOSURE AGREEMENT

THIS CONFIDENTIAL DISCLOSURE AGREEMENT (the "Agreement") is made as of this 23 day of May 2017, (the "Effective Date") by and between Neuralink, having a place of business at [redacted] (hereinafter referred to as "Company") and The Regents of the University of California, on behalf of its Davis campus, having a business address at Sponsored Programs Office, 1850 Research Park Drive, University of California, Davis, California 95618 (hereinafter referred to as "Institution"), individually referred to as a "Party", and collectively referred to as "Parties".

WHEREAS, Company conducts business in the research and development, manufacture and/or marketing of brain-machine interfaces; and

WHEREAS, the Institution, and specifically Institution's employee, Professor [redacted] has experience and expertise compatible with the research and business of Company; and

WHEREAS, Company and Institution each desire to disclose certain confidential information (as defined below) to the other Party, to enable the Parties to decide whether they would like to proceed to collaborate in a research relationship, based on their mutual interests;

NOW THEREFORE, the Parties hereby agree to enter into this Agreement in order to ensure the confidentiality of the Confidential Information (as defined below) of each Party.

1. Definitions.

1.1 "Confidential Information" means any confidential and proprietary scientific, technical, trade or business information of a Party ("Disclosing Party") disclosed to the other Party ("Receiving Party") in writing marked "confidential", or if disclosed orally or visually is summarized in writing marked "confidential" and provided to Receiving Party within thirty (30) days of such disclosure. Confidential Information includes, without limitation, formulations, techniques, methodology, assay systems, formulae, procedures, tests, clinical protocols, data, reports, know-how, sources of supply, patent positioning, relationships with consultants and employees, business plans and business developments, information concerning the existence, scope or activities of any research, development, clinical trials of either Party, as well as manufacturing, marketing or other projects of Company, and any other confidential information about or belonging to Company's suppliers, licensors, licensees, partners, affiliates, customers, potential customers or others including user names and passwords.

"Confidential Information" does not include information which:

a) was known to the Receiving Party at or prior to the time it was disclosed by the Disclosing Party, other than under circumstances of confidentiality, as evidenced by the Receiving Party's written records at the time of disclosure;

b) is at the time of disclosure or later becomes publicly known under circumstances involving no breach of this Agreement;

c) is lawfully and in good faith made available to the Receiving Party by a third party who did not derive it, directly or indirectly, from Disclosing Party;

d) is independently developed by the Receiving Party without the use of Disclosing Party's Confidential Information, as evidenced by the Receiving Party's written records; or

e) required to be disclosed by law.

For the purpose of this Section 1.1, specific Confidential Information received by the Receiving Party hereunder shall not be deemed to fall within any of the foregoing exceptions merely because it is embraced by general information within any such exception(s).

1.2 Examples of Confidential Information. For purposes of illustration, the Confidential Information may be contained in various media, including, without limitation, records of research data and observations, records and results of preclinical and clinical trials, patent applications, regulatory filings, computer programs, manuals, plans, drawings, designs, specifications, supply and customer lists, internal financial data and other documents and records of a Party.

2. Confidentiality.

2.1 Acknowledgment Regarding Ownership. Receiving Party hereby acknowledges that the Disclosing Party is and shall at all times remain the sole owner of its Confidential Information. The Disclosing Party represents that it has the right to disclose its Confidential Information to the Receiving Party under this Agreement.

2.2 Nondisclosure of Confidential Information. Receiving Party agrees, during the term of this Agreement and for the period ending three (3) years thereafter, not to disclose to any third party any of Disclosing Party's Confidential Information. Receiving Party shall not directly or indirectly publish, disseminate or otherwise disclose, deliver or make available to any person outside its organization any of the Confidential Information of Disclosing Party. Receiving Party may, however, disclose the Confidential Information of Disclosing Party to persons within its organization and to its affiliates and agents who/which have a need to receive such Confidential Information in order to further the purposes of this Agreement and who/which are bound to protect the confidentiality of such Confidential Information. Receiving Party may disclose the Confidential Information of Disclosing Party to a governmental authority or by order of a court of competent jurisdiction, provided that such disclosure is subject to all applicable governmental or judicial protection available for like material, if possible, reasonable advance notice is given to Disclosing Party. The Receiving Party shall take reasonable steps to limit the scope of such disclosure.

2.3 Use of Confidential Information. Receiving Party shall use the Confidential Information of Disclosing Party solely for the purpose(s) set forth above or for such other purposes as may be agreed upon by the Parties in writing.

2.4 Protection of Confidential Information. Receiving Party shall exercise all reasonable precautions to physically protect the integrity and confidentiality of the Confidential Information of Disclosing Party, consistent with the way it protects the confidentiality of its own confidential information.

3. Expiration; Termination.

3.1 Expiration: Return of Confidential Information. This Agreement shall expire one (1) year from the Effective Date, unless extended by mutual written agreement of the Parties. Upon the expiration, or otherwise termination of the Agreement, as provided below, Receiving Party shall return all the Confidential Information of Disclosing Party, or destroy such Confidential Information at the option of Disclosing Party, provided, however, that one (1) copy of such Confidential Information may be retained by the Receiving Party, solely for the purpose of monitoring its ongoing obligations hereunder.

3.2 Termination: Prior to expiration of this Agreement as provided above, however, either Party may terminate this Agreement with a thirty (30) day written notice of its intent to terminate the Agreement to the other Party. No reasons shall be required for such termination.

4. Miscellaneous.

4.1 Entire Agreement. This Agreement constitutes the entire agreement of the Parties with regard to its subject matter, and supersedes all previous written or oral representations, agreements and understandings between the Parties.

4.2 No Other Rights Conveyed. No rights or obligations other than as set forth herein arise from the same and neither Party shall have any obligation to enter into any further agreement with the other Party relating to this matter. Nothing herein shall be construed as granting to Receiving Party hereto, by implication, estoppel or otherwise, any rights, title or interest in, or any license under, any patent, or any of the Confidential Information of Disclosing Party other than that specifically provided for herein.

4.3 No Modification. This Agreement may be changed only by a writing signed by both Parties.

4.4 Severability. In the event that any one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Agreement, and all other provisions shall remain in full force and effect. If any provision of this Agreement is held to be excessively broad, it shall be reformed and construed by limiting and reducing it so as to be enforceable to the maximum extent permitted by law.

4.5 Applicable Law. The validity and interpretation of this Agreement and legal relations of the parties to it shall be governed by the laws of the State of California, applicable to the agreements entered into, and to be fully performed in, the State of California, without regard to its conflicts of the laws provisions.

IN WITNESS WHEREOF, duly authorized representatives of Company and Institution have signed this Agreement as of the Effective Date.

Neuralink (Company)

By: [redacted]

CFO

Date: 5/23/17

The Regents of the University of California

By: [redacted]

Ahmad Hakim-Elahi, Ph.D., J.D.
Executive Director, Research Administration

Date: May 23, 2017

UC Davis Agreement # 201703919 (A17-0399)

UNIVERSITY SERVICES AGREEMENT

For Sponsor Activities at the California National Primate Center

THIS AGREEMENT is made and entered into by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA ("University"), on behalf of its Davis Campus California National Primate Center, with a place of business at 1850 research park Drive, Suite 300, Davis, CA 95618 (the "Facility") and Neuralink, with a place of business at [redacted] ("Sponsor").

R EC I TA L S

WHEREAS, the National Primate Research Centers Program is dedicated to improving human and animal health; and

WHEREAS, the National Primate Research Centers are a unique resource for investigators studying human health and disease, offering the opportunity to assess the causes of disease, and new treatment methods in nonhuman primate models that closely recapitulate humans; and

WHEREAS, the Facility is one of seven such centers supported by the National Institutes of Health; and

WHEREAS, The Facility has been established and is maintained to support University's pursuit of its constitutional objectives of instruction, research, and public service; and

WHEREAS, research performed at the Facility and other National Primate Research Centers provides necessary information before proceeding to clinical trials in humans, leading to new drugs, therapies and surgical procedures that benefit human health and quality of life; and

WHEREAS, the services of the Facility may be extended to non-University users (including, when permitted by University policy, University students, faculty, and staff requesting such services for their personal use) only when, in the sole judgment of University, such action will serve purposes consistent with University's objectives and will not adversely affect the conduct of University activities; and

WHEREAS, the services requested by Sponsor have been determined to serve purposes consistent with University objectives and their provision to Sponsor not to adversely affect the conduct of University activities; and

WHEREAS, Sponsor has determined that the services in question cannot be adequately performed by other agencies or commercial firms; and

NOW, THEREFORE, University shall furnish services to Sponsor, as described in scope of work and budget (collectively the "Scope of Work") attached hereto as Exhibit A, under the following terms and conditions:

T E R M S A N D C O N D I T I O N S

1. Services. University shall perform the research and related services described in the Scope of Work in full compliance with all applicable laws, rules and regulations and good scientific practices (such services, as amended from time to time upon mutual written consent of the authorized representative of the parties, the "Services"), which include the use of Facility and personnel. University, through Facility personnel, shall perform Services detailed in

the Scope of Work, Exhibit A, attached hereto and incorporated herein and shall use reasonable efforts to distinguish the work performed under this Agreement from other work that the Facility personnel perform for other academic and industrial purposes (collectively, "Other Work"), and shall keep records pertaining to such Other Work separately from the records to be maintained in connection with the Services. Services may include those performed solely by Facility or may include facility-assisted services performed by both Facility and Sponsor as more fully described in Exhibit A. Deliverables shall consist of a report of the data and results generated in the conduct of the Services, which shall be sent by Facility to Sponsor promptly upon completion of Services; University shall retain a copy of the report, which shall be considered the Confidential Information of the Sponsor, however, the data and information resulting from the performance of the Services included therein shall be subject to publication by the University, that is, such generated data and information shall be subject to publication by University, all in accordance with Section 12. Additional work shall be performed only if authorized in advance by written amendment to this agreement executed by authorized representatives of both parties. To the extent that any provision of Exhibit A is inconsistent with this agreement, this agreement shall take precedence. Sponsor's addendum or purchase order, if any, shall have no effect on the terms and conditions of this agreement.

2. Agreement to Primate Center Rules. Any and all of individuals from Sponsor working on site at Facility agree to follow and abide by rules, regulations and guidance as set forth by Facility and provided to such individuals through on-site training upon their first visit to preform work under this Agreement. Such training, conducted by the Facility's on-site trainer, includes the following:

   - Occupational health working with NHP's
   - Exposure reporting
   - General personal protective equipment (PPE) requirements and flow of the CNPRC
   - Surgical suite overview
   - Necropsy suite overview
   - Review of supporting standard operating protocols (SOPs)

3. Priority of University work. Subject to the timelines set forth in the Scope of Work, as applicable, Sponsor understands that University work always has priority over work to be performed for non-University users.

4. Term. The term of this agreement shall be from the date of Sponsor's signature continuing through June 30, 2018.

5. Payment. Fees for Services shall be as described in Exhibit A, attached. For all amounts payable to University pursuant to this Agreement, University shall submit to Sponsor monthly invoices that set forth in reasonable detail the Services performed under each Scope of Work during the preceding month and the corresponding amounts charged therefor. Sponsor shall pay for Services performed per Scope of Work, within 30 days of Sponsor's receipt of University's invoice. Facility reserves the right to suspend performance of services if Sponsor fails to make payment in full within 60 days of Sponsor's receipt of University's invoice. The aggregate amounts set forth in each Scope of Work will constitute the maximum amount that University will be entitled to receive in compensation for the Services rendered to Sponsor hereunder and no additional payments shall be due to University hereunder unless specifically agreed to in writing by Sponsor and University.

6. Indemnification and Insurance. Sponsor agrees to defend, indemnify and hold Facility harmless from and against any and all liability, loss, expense, attorneys' fees, property damage or claims for injury or damages (collectively "Damages") in each case, to the extent

brought by a third party, and resulting from the performance of this agreement by University, Facility or Facility personnel in accordance with Exhibit A and Sponsor's written instructions, except to the extent that such Damages result directly from the negligence, willful misconduct or breach of this Agreement by University, Facility or any Facility personnel. Sponsor, shall also be held liable for Facility loss, damages, injuries and/or expenses arising from Sponsor negligence or from Sponsor personnel not following Facility rules, regulations and/or guidance while at Facility, provided such rules, regulations and/or guidance were, as applicable, provided to Sponsor, or its employees or representatives.

6.1. Evidence of Insurance. Prior to provision of services, upon University's request, Sponsor shall provide University written evidence of Sponsor's insurance coverage relevant to the presence or activity of Sponsor, its officers, agents, and employees while in, on or about University property and/or Facility. In the event Sponsor's coverage is not acceptable to University, University shall have the right to immediately suspend services. If Sponsor fails to provide acceptable insurance within 10 days after University's written notice, University may terminate this agreement. If Sponsor does not come on to University property and/or Facility, no evidence of insurance shall be required.

6.2. Patent Infringement. Sponsor shall indemnify University, its agents and employees, against all liability (including costs and expenses incurred) for use of any invention or discovery and for third party claims that allege the infringement of any issued U.S Patent occurring during the performance of this Agreement and only to the extent resulting from Sponsor's request or instruction that the Facility utilize any device, method, or technique provided by or on behalf of Sponsor and not normally utilized by the Facility. Facility will inform Sponsor of any intellectual property infringement risk of which it is actually aware related to any such request or instruction by Sponsor.

6.3. Indemnification Procedure. A Party's agreement to indemnify, defend and hold the other Party (the "Indemnified Party") and its related entities harmless under this Agreement is expressly conditioned upon the Indemnified Party: (a) providing written notice to the first Party (the "Indemnifying Party") of any claim, demand or action arising out of the indemnified activities within thirty (30) days after the Indemnified Party has knowledge of such claim, demand or action; (b) permitting the Indemnifying Party to assume full responsibility and authority to investigate, prepare for and defend against any such claim or demand; (c) assisting the Indemnifying Party, at the Indemnifying Party's reasonable expense, in the investigation of, preparation for and defense of any such claim or demand; and (d) not compromising or settling such claim or demand without the Indemnifying Party's written consent.

7. Liability.

7.1. Consequential Damages. University shall not be liable for any loss of profits, claims against Sponsor by any third party, or consequential damages. IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES OF ANY TYPE OR KIND (INCLUDING, WITHOUT LIMITATION, LOST PROFITS) REGARDLESS OF WHETHER ANY SUCH LOSSES OR DAMAGES ARE CHARACTERIZED AS ARISING FROM BREACH OF CONTRACT, BREACH OF WARRANTY, TORT, STRICT LIABILITY, OR OTHERWISE, EVEN IF SUCH PARTY IS ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, OR IF SUCH LOSSES OR DAMAGES ARE FORESEEABLE.

7.2. Delay/Desired Result. University shall incur no liability to Sponsor or to any third party for any loss, cost, claim or damage, either direct or consequential, arising from

University's delay in performance for reasons outside of the reasonable control of University or any failure to achieve a desired result from the performance of the Services, except to the extent that Sponsor incurs direct damages as result of the negligence, willful misconduct or breach of this Agreement by University, Facility or any Facility personnel. For avoidance of doubt, University will never be liable for any indirect of consequential damages whatsoever.

7.3. Property Damage. University shall incur no liability to Sponsor or to any third party for loss or destruction of or damage to any materials to be sampled, assayed, or tested, data, equipment, or other property brought upon University premises by Sponsor or delivered to University by Sponsor in connection with this agreement. Sponsor accepts all liability for risk of loss to any and all such property, except to the extent such liability loss or destruction arises or results directly from the negligence or willful misconduct by University, Facility or any Facility personnel.

7.4. Disclaimer. University acknowledges that the materials and equipment provided in connection with the Services as well as the techniques practiced are unproven and experimental in nature, are currently in the development stage. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREIN, SPONSOR PROVIDES NO WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE. SPONSOR SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY PROPRIETARY RIGHTS.

8. Confidential Information.

8.1. Definition and Marking. During the course of this agreement, Sponsor may provide University with materials, models other information, including, without limitation, proprietary information and materials (whether or not patentable or copyrightable) regarding Sponsor's technology, research, products, business information or objectives, in each case, that it regards as proprietary or confidential (whether disclosed orally, visually, in writing, or otherwise physically) (collectively, "Confidential Information". Sponsor will use reasonable efforts to mark or stamp any such material or other information as "CONFIDENTIAL INFORMAITON" (or other appropriate stamp or legend), prior to or at the time any such material or other information is disclosed by Sponsor provided, however, that the failure of Sponsor so to identify as Confidential Information shall not relieve the University from its obligations of confidentiality hereunder if the University knew or reasonably should have known that such material or other information was confidential by its nature or the nature of its disclosure. If communicated orally to University, Sponsor shall use all reasonable efforts to submit confirmation in writing within five days of such disclosure. For the avoidance of doubt, Sponsor's samples, equipment and materials provided hereunder are, in each case, its Confidential Information and do not need to marked as Confidential Information.

8.2. University's Obligation. University shall use at least the same degree of care, but not less than a reasonable degree of care, to avoid unauthorized disclosure or use of the Confidential Information as it uses with respect to its own confidential information of like importance. Additionally, University shall not during the term of this Agreement and for five (5) years thereafter, (a) use any Confidential Information of Sponsor except as is necessary for the conduct of the Services in accordance with this Agreement or (b) disclose any Confidential Information of Sponsor to any third party, except to those employees of Facility who have a need to know such Confidential

Information for the conduct of the Services in accordance with this Agreement and who are bound by enforceable obligations (whether through employment contract or otherwise) to maintain the confidentiality of the Confidential Information by obligations of confidentiality and non-use at least as restrictive as those contained in this Agreement.

8.3. Exempt Information. Notwithstanding Section 8, Confidential Information does not include information that is (i) not exempt from disclosure under the California Public Records Act (Calif. Gov. Code sec. 6250 et seq.); (ii) otherwise generally available to the public; (iii) rightfully received by University from a third party not in breach of an obligation of confidentiality (directly or indirectly) to Sponsor; (iv) independently developed by University without the use of or reference to the Confidential Information of Sponsor; (v) previously known to University, as evidenced by competent written records other than by disclosure by or on behalf of Sponsor; or (vi) produced in compliance with a court order or when required by law. University shall give reasonable notice to Sponsor that Confidential Information is being sought by a third party (including by court order or under a request pursuant to the California Public Records Act) to afford Sponsor an opportunity to limit or prevent disclosure. Any defense against disclosure shall be at Sponsor's sole initiative, risk, cost, and expense. As an instrumentality of State of California, University may not participate in any defense against such request for disclosure, but will, to the extent not prohibited by law or regulation, reasonably cooperate with Sponsor in connection with the same. Upon Sponsor's request, University agrees to cease using all Confidential Information and to return it promptly to Sponsor.

8.4. Disposition of Confidential Information. Upon completion of services or termination or expiration of this agreement, by Sponsor's written request, University shall return to Sponsor any Confidential Information. Absent such request, Facility shall destroy the Confidential Information in its possession according to its established procedures, and provide written notice certifying such complete destruction.

9. Ownership of Intellectual Property. Ownership rights in intellectual property resulting from Services conducted under the Scope of Work shall follow Inventorship, as determined by US law. To that end, intellectual property owned by Sponsor shall be governed by the policies of the Sponsor, and agreements between the Sponsor personnel and Sponsor. Sponsor understands that it has no claim on intellectual property owned by the University, provided that University agrees to grant and hereby grants to Sponsor under all of University's interest in and to any patent or other intellectual property claiming or covering any inventions, data, results, formulae, designs, specifications, methods, processes, software, databases, techniques, discoveries, technical information, process information, clinical information that is discovered, created, conceived of and/or reduced to practice by University (including any University personnel, Facility, or any Facility personnel) in the provision of Services conducted under the Scope of Work, either alone or with Sponsor, including any modifications or improvements to any material or instrument provided by Sponsor and any intellectual property rights in any of the foregoing (collectively, the "University Intellectual Property") a non-exclusive, worldwide, irrevocable, perpetual, fully paid-up, royalty-free license (with the right to sublicense through multiple tiers) for Sponsor to make, have made, use, have used, sell, offer for sale and import any subject matter that is claimed or covered by the such University Intellectual Property for any and all purposes.

10. Warranties and Disclaimer of Warranty. University represents and certifies that (a) all of its employees or contractors (including Facility personnel) that perform any work in

connection with the Services, prior to performing any such work, will be subject to a legally enforceable obligation to assign all right, title and interest in and to all intellectual property arising from such work to University (either by employment agreement or otherwise); (b) it is not under any obligation to any third party that would conflict with its obligations hereunder; (c) no third party has any claim, right, title or interest as to any intellectual property created hereunder in the performance of the Services and (d) it is regularly engaged in conducting tests in vitro or in laboratory research animals and is qualified by training and/or experience to conduct such tests and research and (e) University shall not grant any third party any commercial rights (including, without limitation, any license or option) that conflict or interfere with the rights granted to Sponsor under this Agreement. UNIVERSITY MAKES NO WARRANTY AS TO RESULTS TO BE OBTAINED BY THE USER FROM THE USE OF ANY SERVICES AND/OR FACILITIES PROVIDED BY UNIVERSITY UNDER THIS AGREEMENT. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

11. Shipment of Restricted Materials. In the event that Sponsor will be providing materials to be sampled, assayed, or used by University in providing Services hereunder whose shipment would require authorization or permits from governmental authorities (including return of any such materials to Sponsor following completion of Services or termination of this agreement), application for such authorization or permit shall be solely at Sponsor's initiative, risk, cost, and expense.

12. University's Right to Use Data. University shall have the unrestricted right to use for its own academic, non-commercial purposes, including publication, any data or information which it may develop in connection with or as a result of performing the Services described in Exhibit A, subject to this Agreement and this Section 12. Upon written request, University agrees to submit a copy of any proposed publication to Sponsor and allow Sponsor a 30-day period in which to review each publication for confidentiality purposes and to identify any inadvertent disclosures of Sponsor's Confidential Information. University shall retain full editorial control of the content of any publication described hereunder; provided, however, that it shall consider any comments from Sponsor reasonably and in good faith, and if requested to do so shall remove from any such proposed publication any Confidential Information of Sponsor (other than the data or information generated by University and contained in the report delivered in accordance with Section 1, which will not be deleted from such publications). In addition, if requested by Sponsor within such thirty (30) day review period, University shall delay submission of the proposed publication for an additional period of up to sixty (60) days of receipt of Sponsor's notice to allow filing of appropriate patent applications by or on behalf of Sponsor. The parties shall, in any publication, consider joint authorship and acknowledge the contributions and publications of the others as scientifically appropriate. For the avoidance of doubt, University shall not publish Sponsor's Confidential Information.

13. Use of University's Name. Sponsor shall not use the name or mark of University in any form or manner in advertisements, reports, or other information released to the public without the prior written approval of authorized representative of the University, which consent shall not be unreasonably withheld, unless such communication is required to be made by law or pursuant to the rules and regulations of a government agency or self-regulating stock exchange or listing organization, and after consultation and coordination between the Parties.

14. Termination. Either Party may terminate this agreement at any time by giving the other Party sixty (60) calendar days' prior written notice of such intent to terminate, with such termination to be effective upon the expiration of such thirty (60)-day period (or such shorter

period agreed by the Parties). Upon any such termination, University shall, within fifteen (15) days of such termination, deliver to Sponsor one complete set of all then-existing work-product and information generated in performance of this Agreement, to the extent same is not already in Sponsor's possession. Termination or expiration of this Agreement for any reason shall not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement. Without limiting the foregoing, Section 7, 8, 9, 12, 13, 14 (as applicable), 15 – 20, 22 and 23 shall survive the termination or expiration of this Agreement. Upon termination of this Agreement, University will reimburse Sponsor all amounts that have been paid by Sponsor in respect of any Services not performed, provided that, in the event of a termination by Sponsor, Sponsor shall remain liable for all unpaid Sponsor obligations in respect of any Services that have been performed, including, but not limited to any and all reasonable non-cancellable expenses incurred by University prior to the effective date of such termination in anticipation of the performance of the Services.

Upon any termination or expiration of this Agreement, Sponsor may require the timely transfer of any animals, as well as materials, equipment or test Articles at that time planned to be used in connection with the Services to any USDA approved, USDA-registered research facility, with appropriate resources needed for working with macaques as well as with experience working with macaques. University shall fully cooperate with the Sponsor in connection with such transfer at Sponsor's expense, which will include the accounting of full costs for each animal transferred.

15. Notices. Notices shall be directed to the appropriate parties at the following addresses:

15.1. Regarding Contract. Correspondence or inquiries regarding contractual matters shall be directed to the appropriate party at the following addresses:

UNIVERSITY	SPONSOR
Sponsored Programs University of California, Davis 1850 Research Park Drive, Suite 300 Davis, CA 95618 Attention: Executive Director e-mail: Awards.ucdavis.edu	Neuralink Corporation [redacted], Attention: Legal Department

15.2. Regarding Program/Work. Correspondence or inquiries regarding the substance and progress of work to be performed, or payment for services should be directed to the following addresses:

[redacted]
California National Primate Research Center
One Shields Avenue
Davis, CA 95616
Phone: [redacted]
[redacted]@ucdavis.edu

16. Attorneys' Fees. If any action at law or equity is brought to enforce or interpret the terms of this agreement, including collection of delinquent payment, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which it may be entitled.

17. Relationship of the Parties. The parties to this agreement shall be and remain at all times independent contractors, neither being the employee, agent, representative, or sponsor of the other in their relationship under this agreement.

18. Governing Law. This agreement shall be construed pursuant to California law without reference to its conflict of laws principles or provisions.

19. Amendment. No change in any term or condition of this agreement shall become effective unless by amendment in writing signed by authorized representatives of both parties.

20. Severability. If a provision of this agreement becomes, or is determined to be, illegal, invalid, or unenforceable, that will not affect the legality, validity, or enforceability of any other provision of the agreement or of any portion of the invalidated provision remains legal, valid, or enforceable.

21. Assignment. University shall have no right to assign its rights or obligations under this Agreement without the prior written consent of Sponsor and any attempt by Institution to assign this Agreement or any right or obligation hereunder in violation of this Section shall be void and of no effect.

22. Counterparts. This Agreement may be executed in counterparts, including, without limitation, by .pdf, and each executed counterpart shall be considered an original of the same Agreement if each Party has executed at least one counterpart.

23. Entire Agreement. This agreement constitutes the entire understanding of the parties respecting the subject matter hereof and supersedes any prior understanding or agreement between them, written or oral, regarding the same subject matter.

IN WITNESS WHEREOF, the Parties have executed this Agreement, effective as of the last date set forth below.

Neuralink	THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
By: [redacted] (authorized signature)	By: [redacted]
Name: [redacted]	Ahmad Hakim-Elahi, Ph.D., J.D.
Title: CFO	Executive Director, Research Administration
Date: September 21, 2017	Date: 9/21/2017

Exhibit A

Scope of work and budget

Neuralink Corporation is developing large-scale neural interfaces devices for high-bandwidth information transfer to and from the brain. We will be using a macaque model for this work. The first stage of this work will be to test and refine our implantable devices, initially in terminal surgical procedures-ideally with culled animals-and then for chronic use. In parallel (Phases Two and Three), we will begin developing in-cage behavioral training and testing, with the goal of being able to run a variety of sensorimotor and cognitive tasks with socially-housed animals.

The outline below describes our short- and medium-term needs. However, as an early-stage startup, the Parties understand and agree that the current plans set forth below are likely to evolve on short timescales. With respect to personnel, Neuralink will have reasonable access to CNPRC technical staff (on a fee-per-time basis at the Facilities then-standard rates for such time and access) and will be permitted to bring Neuralink staff and contractors to work at the CNPRC.

- **Phase 1: June 2017**
  - Six adult rhesus for terminal procedures
  - Utilizes "short term" candidates in robust health for imaging and 16 hour surgery. Discounted animal purchase fees for these subjects.
  - CT scan 1x per animal
  - MRI prior to surgery, 2.0 hour scan
  - Each surgery is budgeted for 16 hours, includes overtime for anesthesia tech and pathology techs for evening/nighttime coverage
  - Euthanasia and perfusion/necropsy for tissue collection

- **Phase 2: July 2017 -June 2018**
  - Two young adult rhesus males, 4-8 years old, for chronic testing
  - Two survival surgical procedures each, budgeted for 12 hours, includes overtime for anesthesia tech for evening coverage
  - One CT scan per animal
  - One MRI per animal (2.0 hour scan)
  - post-op chronic studies, housing for -1 year
  - Post-op implant maintenance x 36 weeks
  - CNPRC technician time for training testing – 50% effort of a highly experienced/skilled research associate. Necropsy with perfusion, tissue collections
  - Assumes Neuralink provides testing apparatus.

- **<u>Phase 3: July 2017 – June 2018</u>**
  - Obtain 6 additional animals from CNPRC for initial behavioral training
  - Have animals socially housed (in pairs at first) in cages large enough to include space for social interaction and a compartment for behavioral training apparatus (e.g., touch screen, reward devices, etc.). This could be multiple standard apartment units or something like the Britz Flex-a-gon units.
  - CNPRC technician time for training testing
  - Assumes Neuralink provides testing apparatus and gang cages

Budget

The maximum compensation payable in connection with each phase of the research described in this Scope of Work shall be as follows, payable in accordance with Section 5 of the Agreement:

Phase 1: June 2017	$ 83,946
Phase 2: July 2017 -June 2018	$320,306
Phase 3: July 2017 – June 2018	$391,754
Total:	**$796,006**

Proposed Project: Neuralink
Prepared for: (b) (6), (b) (7)(C)
Prepared by: [redacted]
Date: 6/5/17

Start: 6/1/17

Phase 1: Device testing, terminal subjects

n=3 robust terminal animals
Pre-op PE, CT, MRI (assume 2 hr scan at SKYRA)
16 hr terminal surgery
necropsy /perfusion(~ 10 pm)

Item	per animal	# Animals	Total Cost	Comments
Animals	3,956.80	3	11,870.40	1/2 price for robust terminal subjects, 30 days per diem for pre-op imaging
Surgery	4,783.04	3	14,349.12	16 hour terminal surgery with full veterinary and anesthesia tech support
Imaging	2,240.00	3	6,720.00	One 1.5 hr MRI plus one CT scan per subject
Pathology	948.53	3	2,845.59	Necropsy with perfusion - Evening/OT charges
Miscellaneous	1,405.87	3	4,217.61	project management/coordination, pre-study exams, miscellaneous supplies
Professional support			4,413.00	
Total Direct Project Costs:			$ 44,415.72	
Indirect cost			$ 39,529.99	
Total Study Cost			**$ 83,945.71**	

Proposed Project: Neuralink
Prepared for: (b) (6), (b) (7)(C)
Prepared by: [redacted]
Date: 6/5/17

Start: 6/1/17

Phase 2: Device testing, survival subject

n=2 adult rhesus
Pre-op PE, CT, MRI (assume 2 hr scan at SKYRA)
Two 12 hr surgeries per animal
SRA support for training, implant maintenance
necropsy/perfusion

Item	per animal or procedure	# Animals	# procedures	Total Cost	Comments
Animals	12,590.00	2		25,180	Two adult rhesus plus 1 year per diem
Surgery	5,527.00	2	2	22,108	12 hour surgery plus post-op recovery, pharmacy, and nursing care
Imaging	2,280.00	2		4,560	One 1.5 hr MRI plus one CT scan per subject
Pathology	600.00	2		1,200	Necropsy with perfusion
Miscellaneous	9,935.00	2		19,870	project management (including coordination of surgery plus post op and long term care), miscellaneous supplies
Veterinary Care	3,355.00	2		6,710	clinical treatments, monitoring and veterinary care for 1 year
Research Associate				81,019	Research Associate support for implant maintenance and animal training/testing for 1 year
Professional support				8,827	
Total Direct Project Costs:				$ 169,474	
Indirect cost				$ 150,832	
Total Study Cost				**$ 320,306**	

Proposed Project: Neuralink

Prepared for: (b) (6), (b) (7)(C)

Prepared by: [redacted]

Date: 6/5/17

Phase 3: Six adult rhesus for traingin and testing

purchase 6 adult rhesus, 1 year per diem

Gang/pair caging (Sponsor to provide gang cages)

SRA support for training

Item	per animal or procedure	# Animals	# procedures	Total Cost	Comments
Animals	11,919.00	6		71,514	six adult rhesus purchase plus 1 year per diem
Surgery	5,527.00	0	0	-	12 hour surgery plus post-op recovery, pharmacy, and nursing care
Imaging	2,280.00	0	0	-	One 1.5 hr MRI plus one CT scan per subject
Pathology	600.00	0	0	-	Necropsy with perfusion
Miscellaneous	3,062.00	6		18,372	project management/coordination, miscellaneous supplies
Veterinary Care	3,355.00	6		20,130	clinical treatments, monitoring and veterinary care for 1 year
Research Associate				88,434	Research Associate support for animal training/testing for 1 year
Professional support				8,827	
Total Direct Project Costs:				$ 207,277	
Indirect cost				$ 184,477	
Total Study Cost				**$ 391,754**	

AMENDMENT TO THE UNIVERSITY SERVICES AGREEMENT

This **AMENDMENT TO THE UNIVERSITY SERVICES AGREEMENT** (the "***Amendment***") is effective as of June 15, 2018 (the "***Amendment Effective Date***") by and between **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** ("***University***"), on behalf of its Davis Campus California National Primate Center, with a place of business at 1850 research park Drive, Suite 300, Davis, CA 95618, and **NEURALINK CORPORATION**, with a place of business at [redacted] ("***Sponsor***"). Capitalized terms not expressly defined herein shall have the meaning set forth in the Agreement.

RECITALS

WHEREAS, University and Sponsor entered into a University Services Agreement, effective as of September 21, 2017 (the "***Agreement***"), which set forth the terms and conditions for certain animal studies in support of Sponsor's development of large-scale neural interfaces devices for high-bandwidth information transfer to and from the brain;

WHEREAS, the Agreement is set to expire on June 30, 2018, and University and Sponsor now each desire to extend the term of the Agreement by amending the Agreement in accordance with Section 19 thereof.

NOW, THEREFORE, the Parties hereby agree to amend the terms of the Agreement as provided below, effective as of the Amendment Effective Date.

1. Amendment. Section 4 of the Agreement is hereby deleted and replaced in its entirety to read as follows:

> "**4. Term**. The term of this agreement shall be from the date of Sponsor's signature continuing through June 30, 2019."

2. Miscellaneous.

(a) Effect of Amendment. Except as specifically amended hereby, the Agreement shall continue in full force and effect. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms, conditions and provisions of this Amendment shall govern and control. The Agreement and this Amendment constitute the full and entire understanding and agreement between the parties regarding the matters set forth herein.

(b) Counterparts. This Amendment may be executed in two or more counterparts and by facsimile signature, each of which shall be deemed an original, but all of such counterparts together shall constitute one and the same instrument. The signatures of both parties need not appear on the same document. The delivery of signed counterparts by facsimile or email transmission that includes a copy of a sending party's signature is as effective as signing and delivering the counterpart in person.

[Signature Page Follows]

IN WITNESS THEREOF, University and Sponsor have executed this Amendment, effective as of the Amendment Effective Date.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: [redacted]

6/13/2018

Name: Ahmad Hakim-Elahi, Ph.D., J.D.

Title: Executive Director, Research Administration

NEURALINK CORPORATION

By: [redacted]

Nam[redacted]

Title: _____

[*Signature Page to Amendment to the University Services Agreement*]

AMENDMENT TO THE UNIVERSITY SERVICES AGREEMENT

This **AMENDMENT TO THE UNIVERSITY SERVICES AGREEMENT** (the "***Amendment***") is effective as of [November 30, 2018] (the "***Amendment Effective Date***") by and between **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** ("***University***"), on behalf of its Davis Campus California National Primate Center, with a place of business at 1850 research park Drive, Suite 300, Davis, CA 95618, and **NEURALINK CORPORATION**, with a place of business at [redacted] ("***Sponsor***"). Capitalized terms not expressly defined herein shall have the meaning set forth in the Agreement.

RECITALS

WHEREAS, University and Sponsor entered into a University Services Agreement, effective as of September 21, 2017 (the "***Agreement***"), which set forth the terms and conditions for certain animal studies in support of Sponsor's development of large-scale neural interfaces devices for high-bandwidth information transfer to and from the brain;

WHEREAS, the Agreement has a Budget amount as defined in Exhibit A, and University and Sponsor now each desire to increase the Budget amount by amending the Agreement in accordance with Section 19 thereof.

NOW, THEREFORE, the Parties hereby agree to amend the terms of the Agreement as provided below, effective as of the Amendment Effective Date.

1. Amendment. Exhibit A of the Agreement is hereby amended with the following language appended at the end:

> "**Amended Budget:** On the Amendment Effective Date the above Budget amount is increased by a further $500,000, resulting in a cumulative total Budget amount of $1,296,006. For clarity, this Amended Budget amount is the maximum cumulative compensation payable in connection with the research. All services and supplies to be invoiced on a monthly basis in accordance with Section 5 of the Agreement."

2. Miscellaneous.

(a) Effect of Amendment. Except as specifically amended hereby or any other duly executed amendments, the Agreement shall continue in full force and effect. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms, conditions and provisions of this Amendment shall govern and control. The Agreement and this Amendment constitute the full and entire understanding and agreement between the parties regarding the matters set forth herein.

(b) Counterparts. This Amendment may be executed in two or more counterparts and by facsimile signature, each of which shall be deemed an original, but all of such counterparts together shall constitute one and the same instrument. The signatures of both parties need not appear on the same document. The delivery of signed counterparts by facsimile or email

transmission that includes a copy of a sending party's signature is as effective as signing and delivering the counterpart in person.

IN WITNESS THEREOF, University and Sponsor have executed this Amendment, effective as of the Amendment Effective Date.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: [redacted]

Name: Ahmad Hakim-Elahi, Ph.D., J.D.

Title: Executive Director, Research Administration

Date: 1/18/2019

NEURALINK CORPORATION

By: [redacted]

Name: [redacted]

Title: _____

Start Date		*Non-NIH*	Neuralink	Proposal Due Date/Archive:		
End Date:			(b) (6), (b) (7)(C)	12 Months	0.97 Months	12.97 Months

PERSONNEL						Multi
				Period 1	Period 2	Total
Name/Role:	Annual Salary Base	Effort Per 1	Effort Per 2	1/1/18-12/31/18	1/1/19-1/30/19	1/1/18-1/30/19
1 (b) (6), (b) (7)(C)	387,100	2.0%	2.0%	7,742	626	8,368
Total Salaries				**7,742**	**626**	**8,368**

	FY Split:	*0.97/0*			Yes
Benefits by Person	Code	%	Period 1	Period 2	Total
1 (b) (6), (b) (7)(C)	A	19.5	1,510	122	1,632
Total Benefits			**1,510**	**122**	**1,632**
Total Personnel			**9,252**	**748**	**10,000**
Primate Center Costs		**Type:**	***254,550***	***0***	**254,550**
Animal Costs			140,925		140,925
Labor Recharge			54,713		54,713
Veterinary Care			34,261		34,261
Miscellaneous Costs			24,651		24,651
Total Other Direct Costs			**254,550**	**0**	**254,550**

Total Direct Costs			**263,802**	**748**	**264,550**
Indirect Cost Base	**Rate Type:**	Other: (Enter Info	263,802	748	264,550
Indirect Costs		**Base Type:**	*234,785*	*665*	*235,450*
Total Costs (Direct + Indirect)			**$498,587**	**$1,413**	**$500,000**

AMENDMENT #3 TO THE UNIVERSITY SERVICES AGREEMENT

This **AMENDMENT TO THE UNIVERSITY SERVICES AGREEMENT** (the "***Amendment***") is effective as of June 25, 2019 (the "***Amendment Effective Date***") by and between **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** ("***University***"), on behalf of its Davis Campus California National Primate Center, with a place of business at 1850 research park Drive, Suite 300, Davis, CA 95618, and **NEURALINK CORPORATION**, with a place of business at [redacted] ("***Sponsor***"). Capitalized terms not expressly defined herein shall have the meaning set forth in the Agreement.

RECITALS

WHEREAS, University and Sponsor entered into a University Services Agreement, effective as of September 21, 2017, which has been since amended twice (the "***Agreement***"), and which set forth the terms and conditions for certain animal studies in support of Sponsor's development of large-scale neural interfaces devices for high-bandwidth information transfer to and from the brain;

WHEREAS, the Agreement is set to expire on June 30, 2019, and University and Sponsor now each desire to extend the term of the Agreement by amending the Agreement in accordance with Section 19 thereof.

NOW, THEREFORE, the Parties hereby agree to amend the terms of the Agreement as provided below, effective as of the Amendment Effective Date.

1. Amendment. Section 4 of the Agreement is hereby deleted and replaced in its entirety to read as follows:

> "**4. Term**. The term of this agreement shall be from the date of Sponsor's signature continuing through June 30, 2020."

2. Miscellaneous.

(a) Effect of Amendment. Except as specifically amended hereby, the Agreement shall continue in full force and effect. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms, conditions and provisions of this Amendment shall govern and control. The Agreement and this Amendment constitute the full and entire understanding and agreement between the parties regarding the matters set forth herein.

(b) Counterparts. This Amendment may be executed in two or more counterparts and by facsimile signature, each of which shall be deemed an original, but all of such counterparts together shall constitute one and the same instrument. The signatures of both parties need not appear on the same document. The delivery of signed counterparts by facsimile or email transmission that includes a copy of a sending party's signature is as effective as signing and delivering the counterpart in person.

[Signature Page Follows]

IN WITNESS THEREOF, University and Sponsor have executed this Amendment, effective as of the Amendment Effective Date.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: [redacted]

Name: Ahmad Hakim-Elahi, Ph.D., J.D.

Title: Executive Director, Research Administration

NEURALINK CORPORATION

By: [redacted]

Name: [redacted]

Title: General Counsel

[*Signature Page to Amendment #3 to the University Services Agreement*]

AMENDMENT #4 TO THE UNIVERSITY SERVICES AGREEMENT

This **AMENDMENT TO THE UNIVERSITY SERVICES AGREEMENT** (the "***Amendment***") is effective as of July 1, 2020 (the "***Amendment Effective Date***") by and between **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** ("***University***"), on behalf of its Davis Campus California National Primate Center, with a place of business at 1850 research park Drive, Suite 300, Davis, CA 95618, and **NEURALINK CORPORATION**, with a place of business at [redacted] ("***Sponsor***"). Capitalized terms not expressly defined herein shall have the meaning set forth in the Agreement.

RECITALS

WHEREAS, University and Sponsor entered into a University Services Agreement, effective as of September 21, 2017, which has been since amended three times (the "***Agreement***"), and which sets forth the terms and conditions for certain animal studies in support of Sponsor's development of large-scale neural interfaces devices for high-bandwidth information transfer to and from the brain;

WHEREAS, the Agreement is set to expire on June 30, 2020, and University and Sponsor now each desire to extend the term of the Agreement by amending the Agreement in accordance with Section 19 thereof.

NOW, THEREFORE, the Parties hereby agree to amend the terms of the Agreement as provided below, effective as of the Amendment Effective Date.

1. **Amendment.**

   a) Exhibit A-1, entitle "Additional Scope of Work and Budget", a copy of which is attached is added to the Agreement.

   b) Any further modifications to the attached Scope of Work would need to be pre-approved by both parties in writing, signed by their respective authorized representatives.

   c) Section 4 of the Agreement is hereby deleted and replaced in its entirety to read as follows:

      "**4. Term**. The term of this agreement shall be from the date of Sponsor's signature continuing through December 31, 2020."

2. **Project costs for July 1, 2020, through September 30, 2020**:

Neuralink's understand and agrees that its financial obligations to the University for the period of July 1, 2020, through September 30, 2020, is as follows:

a. July 1, 2020:.....$28,336.98

b. August 2020:..... $34,760.20
c. September: $28,378.77

Total 71/20 – 9/30/20:..... $91,475.96

University has already issued invoices for the above to Neuralink. The above total of $**91,475.95** is due and payable concurrent with entering into this Amendment #4.

3. Miscellaneous.

(a) Effect of Amendment. Except as specifically amended hereby, the Agreement shall continue in full force and effect. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms, conditions and provisions of this Amendment shall govern and control. The Agreement and this Amendment constitute the full and entire understanding and agreement between the parties regarding the matters set forth herein.

(b) Counterparts. This Amendment may be executed in two or more counterparts and by facsimile signature, each of which shall be deemed an original, but all of such counterparts together shall constitute one and the same instrument. The signatures of both parties need not appear on the same document. The delivery of signed counterparts by facsimile or email transmission that includes a copy of a sending party's signature is as effective as signing and delivering the counterpart in person.

IN WITNESS THEREOF, University and Sponsor have executed this Amendment, effective as of the Amendment Effective Date.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: Ahmad Hakim-Elahi, Ph.D., J.D. Digitally signed by Ahmad Hakim-Elahi, Ph.D., J.D. Date: 2020.11.11 11:31:34 -08'00'

Name: Ahmad Hakim-Elahi, Ph.D., J.D.

Title: Executive Director, Research Administration

NEURALINK CORPORATION

By [redacted]

Name: [redacted]

Title: General Counsel

Exhibit A-1

Additional Scope of Work and Budget

Entire Scope of Work, Starting July 1, 2020:

- University agrees that Neuralink will house seven (7) NHPs in University facilities, and specifically in [redacted], starting October 1, 2020, and ending on December 31, 2020.
  - Neuralink staff will work with these animals on task conditioning.
  - Because all of the above seven (7) NHOs are surgically naïve, vetcare needs are anticipated to be typical.

- Two Cadaver procedures over this period are anticipated and will be scheduled for surgical development/device fit testing.

- Neuralink may desire to purchase certain tissues from University's biospecimen program.
  - University has informed Neuralink that, due to complications caused by COVID-19, the biospecimen program is currently closed, and may not resume its operation prior to the end of calendar year, 2020
  - University agrees that, should the biospecimen program resumes its operation prior to end of calendar year, 2020, Neuralink may be able to purchase agreed upon amount of some tissue from the University
  - Purchase price of any such tissues will be in addition to the budget shown in this document.

- Neuralink has informed University that it plans to ship their animals out of the University, and to their Fremont facility, prior to the end of calendar year, 2020.
  - The above is subject to all the usual pre-transport PE Exams and testing.
  - An amendment to the current IACUC protocol will also be required as part of this shipment.

- No medical imaging is anticipated.

Budget:

2) July 1, 2020 through September 30, 2020:
   a. July 1, 2020:.....$28,336.98
   b. August 2020:.....$34,760.20
   c. September: $28,378.77
   Total 71/20 – 9/30/20:.....$91,475.96

3) October, 2020, through December 31, 2020:

   University services provided to Neuralink will be billed based on actual expenses and invoices will be issued to Neuralink monthly until the completion of this agreement.

From: Ahmad Hakim-Elahi
Sent: Wednesday, January 27, 2021 1:23 PM
To: [redacted]@ucdavis.edu>; [redacted]@ucdavis.edu>
Cc: (b) (6), (b) (7)(C) [redacted]@UCDAVIS.EDU>
Subject: RE: FW: Neuralink

Thank you [redacted]

Hello [redacted]: Attached is a copy of fully executed Amendment #4, which I added to Cayuse on 11/12/20. Please note the following provided in this amendment:

1. Bottom of page 1, top of page 2, as well as last page of the document:
   a. Costs for July, August, and September
   b. Total of the above: **$91,456.96**

2. Bottom of last page, under the budget:
   a. Repeat of the above, and
   b. Last sentence stating: "University services provided to Neuralink will be billed based on actual expenses and invoices will be issued to Neuralink monthly until the completion of this agreement"

For item 2(b), above, a (b) (6), (b) (7)(C) [redacted] as provided below, our costs is as follows, totaling **$94,558.30:**

- October 2020..... $ 35,247.92
- November 2020 ..... $ 21,516.82
- December 2020..... $ 37,793.56

As (b) (6), (b) (7)(C) [redacted] has explained in her e-mail of yesterday, copied below, we now need to issue a final invoice to Neuralink, to recover the total of **$186,015.26**, i.e. the sum of the two subtotals listed above. Perhaps the final invoice should show the costs for each of the six(6) months subject of this amendment, as follows:

July 2020.....$28,336.98
August 2020.....$34,760.20
September 2020.....$28,378.77
October 2020 .....$35,247.92
November 2020.....$21,516.82
December 2020.....$37,793.56

Total: .....$**186,015.26**

Do you need anything else to issue this final invoice.

Please advise.

Thanks,

Ahmad

From: [redacted] [redacted]@ucdavis.edu>
Sent: Wednesday, January 27, 2021 7:59 AM
To: Ahmad Hakim-Elahi <ahakimelahi@ucdavis.edu> (b) (6), (b) (7)(C) [redacted] UCDAVIS.EDU>
Cc: [redacted] @ucdavis.edu>
Subject: RE: FW: Neuralink

Hi Ahmad and (b) (6), (b) (7)(C) [redacted]

I did verify the $91,475.96 for July – September. The other months are as follows:

- October 2020..... $_35,247.92__
- November 2020 ..... $_21,516.82__
- December 2020..... $_37,793.56__

Best,

[redacted]

[redacted], CRA
Contracts & Grants Manager
UCDAVIS
CALIFORNIA NATIONAL
PRIMATE RESEARCH CENTER
One Shields Avenue
Davis, CA 95616-8542
Email: [redacted] @ucdavis.edu
Phone: (530) 752-3045
Cell Phone: [redacted]

Upcoming Out of Office
February 15th, 2021 – Presidents' Day Holiday

Also:
President, Northern California SRAI Chapter
Society of Research Administrators International
http://www.srainternational.org/

From: Ahmad Hakim-Elahi <ahakimelahi@ucdavis.edu>
Sent: Tuesday, January 26, 2021 8:37 PM
To (b) (6), (b) (7)(C) [redacted] @UCDAVIS.EDU>
Cc: [redacted] @ucdavis.edu>; [redacted] @ucdavis.edu>
Subject: RE: FW: Neuralink

Hello (b) (6), (b) (7)(C) [redacted]

Thank you for your e-mail of today.

My records show that when we put Amendment 4 in place last November, we had the actual costs for the three month period of July 1, 2020, through September 30, 2020, which was a total of $91,475.96. May I please have the costs for the following:

- October 2020..... $_____
- November 2020 ..... $_____
- December 2020..... $_____

Based on the above, I will work with [redacted] for issuing the final invoice.

Thanks,

_____
Ahmad
_____

From: (b) (6), (b) (7)(C)
Sent: Tuesday, January 26, 2021 4:45 PM
To: Ahmad Hakim-Elahi <ahakimelahi@ucdavis.edu>
Cc: (b) (6), (b) (7)(C) @UCDAVIS.EDU>; [redacted] @ucdavis.edu>; [redacted] @ucdavis.edu>
Subject: FW: FW: Neuralink

Hi Ahmad,

I think we have one last issue with Neuralink and then we will be done. I've attached which I believe this is the last amendment we have with Neuralink. If memory serves they declined to sign anything else but agreed to via email to pay actual expenses through the end of their time on our campus (December 31, 2020). They have left Campus as of December 31,2020. We have invoiced them and they have paid through June 30, 2020. We now need to invoice them from July 1, 2020 to December 31, 2020 in the amount of 186,034.25. [redacted] is struggling to do that as she doesn't have an amendment which increases the contract max amount from 1,296,006.

If memory serves we have amendments which increase the max agreement to 1,296,006 which took us through October 2019 (partially). We then invoiced them an additional 487,207 which took their business through June 30, 2020 which they paid. I don't believe we have an amendment for this additional amount. Not sure what contract mechanism we used to invoice them and receive subsequent payment. I believe you worked directly with CGA to accomplish this. We now have a remaining balance of 186,034 for services provided July – December 2020. [redacted] has asked the department for a contractual mechanism to allow her to invoice for these charges. (One thing to note is that the contract was a fixed price agreement from its inception through June 30,2020 and we agreed to a requested change by Neuralink to go to actual expenses starting July 1st through the end of the agreement, which we agreed to.) I'm not sure if you can work directly again to get this remaining balance invoiced?

Please let me know how we should move forward to invoice for these remaining charges.

Thank you,

(b) (6), (b) (7)(C)
(b) (6), (b) (7)(C) @ucdavis.edu/ [redacted]

Exhibit B

October 8, 2021 email from Michael R. Goldstein,
Principal Counsel for the University of California

From: (b) (6), (b) (7)(C) [redacted] edu>
Date: October 8, 2021 at 3:17:22 PM CDT
To: Corey Page <cpage@evansandpage.com>
Cc: (b) (6), (b) (7)(C) [redacted] @ucop.edu>
Subject: RE: Missing UC Davis records - additional necropsy reports and animal ID numbers

Hi Corey-

I am attaching the additional necropsy reports and providing information for you that will enable PCRM to associate all the records we have given, and are giving, them so we do not have to release the animal ID numbers themselves.

In my email to you dated 9/30/2021 2:18 PM, I provided a description of different groups of animals. I am pasting that description below and giving you additional information so PCRM can locate the necropsy reports we have already released to them and associate those reports with the corresponding records for the same animal and then doing the same thing with these additional necropsy reports I am attaching to this email.

There were 23 animals and the responses to your question in your email below about the necropsy records are as follows:

For four of the animals, the necropsy report is contained in the records that were previously released to PCRM.

Those animals, and the vet records associated with them (including the necropsy report, which says "Necropsy Report" on the document itself), all of which were already released to PCRM, are as follows:

ANIMAL NUMBER	BATES RANGE
[Number 1]	0101-0107
[Number 2]	0108-0114
[Number 6]	0140-0156
[Number 20]	0577-0617

In addition to those, three of the animals were assigned to the project for a specific period of time and were later removed from the project and were not terminal during the project. There are no necropsy reports for living animals.

There are no necropsy reports for these animals as explained above. But the BATES numbers for these animals for the records we already released to PCRM are as follows:

ANIMAL NUMBER	BATES RANGE
[Number 3]	0115-0123
[Number 4]	0124-0132
[Number 23]	0692-0693

In addition to the seven above, seven animals were shipped to Neuralink while alive and therefore we do not have necropsy reports for them for the same reasons the previous three.

There are no necropsy reports for these animals as explained above. But the BATES numbers for these animals for the records we already released to PCRM are as follows:

ANIMAL NUMBER	BATES RANGE
[Number 5]	0133-0139
[Number 10]	0180-0201
[Number 14]	0306-0328
[Number 16]	0365-0411
[Number 17]	0412-0484
[Number 18]	0485-0535
[Number 19]	0536-0576

Finally, for the final nine animals, the records were located yesterday and are being reviewed to determine whether they need to be redacted. We will get them to you as soon as possible.

Those records are in the attached PDF. You will see the animal number in a circle in the upper left hand corner of each page. In addition, we are providing the Report ID number below, which is located toward the top of each page and to the left.

ANIMAL NUMBER	BATES RANGE	REPORT ID
[Number 7]	0157-0161	66610
[Number 8]	0162-0172	67942
[Number 9]	0173-0179	65357
[Number 11]	0202-0244	66942
[Number 12]	0245-0264	65558
[Number 13]	0265-0305	66788
[Number 15]	0329-0364	67091
[Number 21]	0618-0645	65860
[Number 22]	0646-0691	69142

Thanks,
(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)
Office of the General Counsel
University of California
direct dial (b) (6), (b) (7)(C)
assistant: (b) (6), (b) (7)(C) @ucop.edu (b) (6), (b) (7)(C)
receptionist: (b) (6), (b) (7)(C)
fax (510) 987-9757
http://www.ucop.edu/general-counsel/

Exhibit C

UC Davis Animal Use Protocol #21222 and approved amendments, “Development of a Large-Scale Brain-Machine Interface in Rhesus Macaques”

Amendment to Protocol #21222
Summary/Purpose: *Request to use dental acrylic in surgery for fastening implants* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 08-13-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 09-19-2019**

1. Proposed Changes:

PURPOSE: The purpose of this amendment is to add the option of using dental acrylic (bone cement) to form a traditional cranial implant over our neural device rather than skin closure over the implant. The option of implanting acrylic implants will be limited to the initial surgery. Our preference shall be to use skin closure whenever feasible, however, for some subjects it may not be possible to close the skin over the device without unacceptable tenting and risk of skin erosion. In those cases we would form an acrylic implant as a last resort.

PROCEDURE: At the time of closing, additional blunt-tipped screws (up to 10 screws, 1.5-4.0 mm in diameter) may be placed in the skull adjacent to the pillbox and connector. The purpose of these screws is to provide additional material for the acrylic to adhere to. The region of bone to be covered by acrylic will be made free of blood, soft tissue, or other debris. Silastic will be used to seal the craniotomy/thread-implant interface prior to applying acrylic. Sterile acrylic will be applied in layers, allowing each layer to cure before applying the next layer. Teflon may be used as a dam to build and smooth each application of acrylic paying special attention to the smoothness of the acrylic at the implant-skin interface. Saline may be used to cool the implant during the acrylic curing process and we would like the option of using "Palacos" brand acrylic which is marketed with a lower curing temperature than typical bone cement. Note "Palacos" is impregnated with gentamicin and antibiotic ointment may placed at the skull/scalp/acrylic interface. When completed, the edges of the cranial implant will be smooth and cover all exposed bone and implant hardware.

Palacos brand acrylic information:
https://www.heraeus.com/us/hme/usa_products_heraeus_medical/usa_palacos/usa_palacos_bone_cement.html

https://www.heraeus.com/media/media/hme/doc_hme/products_us/PALACOS_Sales_Aid_US.pdf

2. Justification for Proposed Changes:

Dental acrylic is commonly used for fastening recording chambers to the cranium and forming protective cranial implants. This is the traditional approach used by primate neurophysiology labs around the world for decades. While we have developed next-generation devices that circumvent this invasive and unwieldy solution, these devices are not yet available. It is preferable to use skin closure over our devices whenever feasible, but for some subjects it may not be possible to close the skin over the device without creating a high likelihood of skin erosion due to the implant size and geometry of the subject's cranium. Therefore, while an acrylic cranial implant may carry a higher overall risk of superficial chronic infection, this risk is typically easily managed. In contrast, unexpected erosion of the skin over the implanted device typically leads to a more fulminant infection by incarcerating bacteria under the skin. Such an outcome may require the subject to be euthanized.

3. Potential Adverse Effects:

Bone damage: The curing of acrylic is exothermic and can damage bone. Acrylic will be applied slowly and in layers to prevent the concentration of heat in one location.

Infection: The acrylic implant will have a larger margin perimeter than a small connector protruding through the skin and an increased risk of infection. Bacteria flourish at the margin, requiring regular cleaning, debridement of granulation tissue, and possibly application of antibiotics. CNPRC SOP II-33 will be followed for maintaining chronic cranial implants. There is also potential for this adverse event in the original protocol and the same amelioration strategies from there would apply, i.e. margin cleaning and antibiotics.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 09/19/2019

Amendment ID 300109

Amendment to Protocol #21222
Summary/Purpose: *Temporary Affiliate Personnel Addition* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 10-21-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved*** - 10-23-2019

1. Proposed Changes:

We would like to add the following personnel to our protocol:

[redacted] - M.S in Biomedical Engineering. [redacted] will be using machines/equipment that interface with the animals during surgery. [redacted] has been provided the option to have a medical evaluation completed by Occupational Health and has received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

[redacted] - B.A. Neuroscience. [redacted] will be using machines/equipment that interface with the animals during surgery. [redacted] has been provided the option to have a medical evaluation completed by Occupational Health and has received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

2. Justification for Proposed Changes:

N/A

3. Potential Adverse Effects:

N/A

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 10/23/2019

Amendment ID 301816

Amendment to Protocol #21222
Summary/Purpose: *Addition of Surgeons* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 10-24-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-28-2019**

1. Proposed Changes:

We request the addition of [redacted] and [redacted] to the roster of surgeons (Section 14e).

2. Justification for Proposed Changes:

Ms. [redacted] and Dr. [redacted] have extensive neurosurgical experience. Ms. [redacted] has developed many aspects of our surgical approach in a rodent model. She has observed and assisted with terminal and survival NHP surgeries and practiced our surgical approach with NHP cadavers. Dr [redacted] has 8 years experience working with a range of NHP surgeries, including neurosurgery, at Columbia University and Stanford University.

3. Potential Adverse Effects:

N/A

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 10/28/2019

Amendment ID 301873

Amendment to Protocol #21222
Summary/Purpose: *Macaque Chair Armrest* [edit]
PI: (b) (6), (b) (7)(C) [redacted]
Date Received: 09-11-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-31-2019**

1. Proposed Changes:

The purpose of this amendment is to describe a refinement to the box chair designed to improve animal ergonomics and comfort while they make reaches and manipulate objects in 3D space. The intent of this refinement is not to in any way restrain the animal, but since this a non-standard chair modification, we would like to bring it to the committee's attention.

A horizontal rod is positioned at the front of the chair at chest height. This is covered by a cushion (foam or a similar material) and encased by a protective sleeve (tyvek or similar). The cushion and sleeve are designed to be easily cleanable and replaceable. The support rod is adjustable so that it can be positioned near the axilla region of the upper arms and provide mechanical support while subjects make reaches with the upper arms. A diagram of the various components this armrest and an animation of their assembly are attached.

In general, we would gradually acclimate the animal to any device(s), clothing, fasteners, etc. We will gradually bring the items first in their peri-personal space, next in contact with their skin and fur, and ultimately secured on their body, using positive reinforcement. In our experience, when gradually acclimated, there is minimal risk of attempted removal or destruction of the clothing or tracking devices. Typical commercially available primate clothing (e.g. made by Lomir) are durable enough to resist tearing/ripping, in our experience. Additionally, in all cases, monkeys will be monitored by a behaviorist in the room while wearing tracking devices or clothing.

2. Justification for Proposed Changes:

Reaches made with the arm in 3D space can be fatiguing. This problem has been well studied in the human-computer interaction literature, where research suggests the use of ergonomic support for gesture based interfaces (Hansberger et al). Thus, improving task comfort and ergonomics will allow our animal subjects to engage with our behavioral tasks longer without discomfort and provide higher-quality data.

Hansberger J, Peng C, Mathis S, Shanthakumar V, Meacham S, Cao L, Blakely V. Dispelling the gorilla arm syndrome: the viability of prolonged gesture interactions. International conference on virtual, augmented, and mixed reality, VAMR 2017. Lecture Notes in Computer Science, vol 10280. Springer, Cham; 2017. p. 505–520.

3. Potential Adverse Effects:

The armrest could be uncomfortable if it is not positioned properly, so we have designed it to be adjustable to the anatomy of different animals. Will acclimate animals to the armrest and will discontinue use for subjects that don't benefit from the additional support.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
DocUpload-08-86335-300852_Amendment.gif

Amendment Request Status: Approved - 10/31/2019

Amendment ID 300852

Amendment to Protocol #21222
Summary/Purpose: *Reflective markers for optical body tracking* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 10-28-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 12-03-2019**

1. Proposed Changes:

The purpose of this amendment is to clarify that we may use small reflective markers to aid optical tracking of the body. These will be placed on hairless skin (either shaved or naturally glabrous). We will consult with CNPRC vet staff when selecting specific markers for use, which will employ a mild adhesive to not cause discomfort or skin irritation when placed or removed. Markers will only be placed while animals are in the chair and monkeys will be gradually acclimated to wearing the markers using positive reinforcement.

2. Justification for Proposed Changes:

We have been successfully using non-toxic dyes to track the body in 2-D, but need to track in 3-D to meet our project goals. In parallel to this amendment, we are pursuing an option for 3-D tracking of the body using a wired electromagnetic tracking system (amendment currently under review). With this amendment are pursuing an alternative approach that is less invasive than the wired approach (no need for vest/sleeves or velcro, etc) and builds on our existing optical tracking system.

3. Potential Adverse Effects:

Markers could be ingested by the monkeys. Our specific chair/rig makes this unlikely, as the hand cannot reach the mouth. Moreover, monkeys will be monitored continuously while wearing markers.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Amendment Request Status: Approved - 12/03/2019

Amendment ID 301925

Amendment to Protocol #21222
Summary/Purpose: *Addition of non-UCD Affiliates to the Protocol* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 01-30-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved*** - 02-20-2020

1. Proposed Changes:

We would like to add [redacted] and [redacted] to the IACUC roster list.

[redacted] (B.A. Symbolic Systems). [redacted]' role at the Primate Center will be to assist/perform electrophysiology recordings in live animals.

[redacted] (RVT, LAT). Veterinary Technician for 10 years in research on new surgical medical devices. [redacted] activities on this project will be limited to research --- for example, assisting, advising and participating in primate neurosurgeries and postoperative monitoring. All clinical care and clinical decisions will be deferred to CNPRC Veterinary Staff.

2. Justification for Proposed Changes:

The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

3. Potential Adverse Effects:

N/A

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 02/20/2020

Amendment ID 303147

Amendment to Protocol #21222
Summary/Purpose: *Fully subcutaneous neural implant (only terminal surgical procedures)* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 02-20-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 03-02-2020**

1. Proposed Changes:

One of our key goals is the development of a fully implanted neural interface device: one which can be implanted completely subcutaneously, without percutaneous connectors or other permanent protrusions through the skin. Crucially, eliminating percutaneous connectors abolishes the principal entry point for infections and is the motivation and justification for this refinement. As a consequence, however, some other aspects of the implant and surgical approach may also change: the implant may communicate via a wireless link, be powered by an internal battery and/or inductive coil. Below we enumerate and justify the changes required by this refinement.

In this amendment, we specifically request approval for preliminary testing of this refinement in terminal surgical procedures; we will seek approval for further testing with survival procedures in a separate amendment.

Implant: As with our previous iterations, the implant (Fig. 1) consists of a hermetically-sealed titanium and glass enclosure around electronics that amplify signals from our novel electrodes. However, it may now additionally include an antenna for wireless data transmission, a battery, and/or a coil for wireless power transmission, as well as several sensors for monitoring the internal status of the implant, including, but not limited to moisture/humidity, temperature and/or pressure.

The implant device is approximately the size of a quarter coin (22.5 mm in diameter) and may be anchored to the skull using bone screws, dental acrylic and/or other approved materials. The device is designed to sit flush within the bone of a typical human skull (~7 mm thick), so we expect it to protrude slightly when implanted into the macaque skull. Thus, we have designed the dorsal aspect of the implant with rounded edges to reduce the likelihood of skin erosion. Additionally, we may use approved materials (e.g. dental acrylic or titanium plates) to smooth out any difference in height between the implant and the skull for achieving successful skin closure (see below).

We remain interested in targeting multiple brain regions. However, since this device has become larger than our previous iteration, we would implant at most one device per surgical procedure, until such time that we are able to decrease its size in a future refinement, which we will submit to the IACUC for approval.

Figure 1. Render of the wireless implant expanded into individual components.

Craniotomy: The implant device is designed to fit, countersunk, within a craniotomy of the same shape and size as the implant. This craniotomy will be no larger than the maximum approved craniotomy diameter (25 mm). The space around the implant may be filled with fibrin, gelfoam, bone wax, acrylic, Surgiflo, Duraseal or other approved materials.

Surgical Approach:

Incision: An incision (no more than 10 cm, consistent with approved protocol) will be made around the burr hole location. This incision may be along the midline or transverse and may be straight or form a curved arc (Fig. 2). Our intent is to minimize the overall length of the incision, and to ensure the incision does not lay on top of the implanted device after closure. We may tent the skin during incision to avoid cutting the muscle at this step.

Muscle retraction / cutting: Our goal is to allow the muscle to attach around the implant and not over the implant, to achieve better wireless data telemetry and/or charging. We outline three possible approaches, in order of increasing invasiveness. We will pilot these options first in cadaver followed by terminal surgery before survival surgeries (to be approved by a subsequent amendment).

Option #1: Retract muscle for electrode insertion and allow it to bunch up around the implant during skin closure. If muscle bunches over more than 1/3 of the implant, we will proceed with option #2.

Option #2: Alternatively, we may split the muscle fibers with a medial to lateral incision so that muscle will attach down to the bone and not overlay on top of the implant.

Option #3: As a last resort, we will excise the portion of muscle covering the craniotomy location in consultation with the vet staff.

Skin closure: We will perform a multilayered close (at least two layers). We may omit suturing the muscle layers if it becomes necessary to perform a minimal partial unilateral muscle retraction (see option #1 above). The first suture layer will be inverted simple interrupted on the fascia layer; the second suture layer will be buried intradermal continuous to close the top layer of skin. We may suture the muscle layers together if significant temporalis muscle retraction is necessary. If we split the muscle over the craniotomy (see option #2 above), we may tack the muscle away from the implant to aid in closure.

Option to cover with acrylic: As our goal is a fully subcutaneous implant, we intend to use skin closure over the implant. However, it may not be possible to close the skin over the device without unacceptable tenting and/or risk of skin erosion, and we may, as a last resort, form a percutaneous acrylic implant over the device using approved materials and methods.

Figure 2: Illustration of the surgical approach, indicating implant, muscle, incision, and craniotomy. Note that “implant” here includes the footprint of the approved temporary carrier mechanism. It is removed after electrode insertion is complete, leaving the circular implant countersunk in the circular craniotomy.

Implanted Battery: The implant will contain a rechargeable battery. We will limit the size of this battery to a maximum of 300 mAh. The battery will be wirelessly chargeable across the skin (see below). Onboard circuitry will protect this battery from the risk of overheating and overcharging.

Charging: An external charging device would be positioned very close to the implant (potentially in physical contact with the animal) while charging and/or powering the implant (Fig. 3). It should be noted that wireless recharging methods such as the one proposed in this amendment are commonly used with FDA approved implantable neural devices. One specific example is the Boston Scientific Vercise DBS deep brain neurostimulator.

We may use magnets to aid in aligning the charging device to the implant. These magnets would be made from biocompatible materials or coated with biocompatible materials (e.g. parylene) and may be built into the implant enclosure or be separate pieces that are implanted adjacent to the implant using dental acrylic, bone screws, or other approved materials. We would select the magnets to be the weakest that would provide successful alignment. If necessary, the external charging device may contain active cooling for thermal management (see below).

Figure 3. Schematic of external charging device. In this example an embedded alignment magnet is placed adjacent to the implant.

Thermal Management: There is potential for heat generation during the battery charging process. The majority of any generated heat would occur outside of the head (in the external charging device) but some may occur in the implanted receiving coil. We will manage any temperature rise of the system in accordance with CEM43 thermal dose guidelines, adjusting how rapidly we charge the implanted battery to maintain the implant at safe temperatures (slower charging would result in less heat generation). If necessary, we may also use previously approved recirculating-water cooling systems to cool the skin over the implant; this system may be incorporated into the external charger for ease of positioning.

In initial testing, we would charge and discharge the battery while monitoring the implant performance characteristics: we will implant live electronics, battery and/or coils or proxy devices to simulate the thermal loads of these. Thermocouples and temperature sensors may be affixed to different locations on the implant and/or animal to validate the efficacy of the charging and/or thermal management strategy. For testing of the thermal management strategy during terminal surgical procedures, sensor probes and/or wire leads may penetrate the skin to provide additional measurements.

We will test the thermal characteristics of the implant and potential thermal management strategies with at least one terminal surgery. This includes charging and discharging the battery and transmitting wireless data. We will likely test several charge and discharge cycles (with different operating characteristics) in a single terminal procedure.

Electrophysiology: Intraoperative electrophysiology recordings will proceed as approved, however there will be no cables plugged into the implant. These recordings may occur prior to or after skin closure and will add no more than two hours to anesthesia time, consistent with the approved protocol.

The animals will be maintained under anesthesia for a maximum of 10 hours prior to euthanasia.

2. Justification for Proposed Changes:

Eliminating percutaneous connectors abolishes the main entry point for infections and is the principal

motivation and justification for this refinement. Moreover, percutaneous connectors affect the cosmesis of the implant, which will be an important factor for human clinical translation.

It is critical to characterize the heat transfer of the implant in the living organism to characterize its thermal performance and identify potential for damage to tissues. In previous iterations of the design, we found that in vivo NHP thermal test results align closely with our simulations. However, heat transfer through organic tissue is challenging to simulate and, consequently, simulation results must be verified against actual temperature measurements. Furthermore, proxies and cadavers cannot be exclusively used because they cannot accurately represent the heat transfer properties of living tissue. It is therefore critically important to have thermal data from NHP in order to calibrate simulation data and drive future design improvements.

3. Potential Adverse Effects:

Thermal damage - In the context of testing this refinement in terminal surgeries, the primary anticipated adverse effect is heating from the implant, the battery and/or the power transfer process. This may cause thermal damage to tissue if the implant temperature rises too high, for too long.

This adverse effect also exists in the approved protocol. We will use the same temperature values as guidelines and will ameliorate it using the same strategies. Briefly, we will monitor the implant temperature using internal sensors and external measurements, including temperature measurements from the external charger. In the event that temperature values approach dangerous limits, we will discontinue the activity causing the implant to overheat (allowing the temperature to drop passively), actively cool the surface of the skin directly above the implant, and/or actively cool the external charging device.

4. Additional Animals:

We request two (2) additional animals in the terminal surgical procedures group.

5. Justification for Additional Animals:

Refinements are initially validated in terminal surgeries, which allows us to assess acute performance and refine the surgical approach in the living organism. After initial testing of the subcutaneous implant refinement in a terminal surgery, we expect to make minor changes that may require further testing. Therefore, we anticipate needing two additional animals in the terminal surgical procedures group to accommodate this testing cycle.

Uploaded Documents:

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Amendment Request Status: Approved - 03/02/2020

Amendment ID 303433

Amendment to Protocol #21222
Summary/Purpose: *Tethered Liquid Perfluorocarbon Coated Needles* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 12-13-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 03-02-2020**

1. Proposed Changes:

This amendment describes the use of tethered liquid perfluorocarbon (TLP) surface coatings on the needle and/or cannula of our needle/cannula (NC) device. The purpose of this refinement is to prevent biofouling by repelling blood and other biological materials from the NC, and in doing so enhance the reusability of this component of our surgical robot and shorten the duration of surgeries. The liquid being used is a fluorocarbon known as perfluoro[poly(ethyleneglycol)dialkyl ether]. A very small volume (tens of microliters) will be applied to the tip of the needle-cannula assembly.

We have tested this refinement in brain proxy and in in vivo rats.

The TLP coating (Fig 1) consists of two layers: a tethered perfluorocarbon (TP) layer which would be applied at the time of NC manufacturing, and a liquid perfluorocarbon (LP) layer which would be applied at the time of surgery. The TP layer is covalently bonded to the substrates—the needle and/or cannula—through oxygen plasma activation followed by a silane treatment. The layer itself is abrasive resistant and is merely tens of nanometers thick. After the TP layer is applied, the NC would be gas sterilized and stored until use.

The LP layer is a liquid, mobile layer which adheres to and saturates the TP coated device, creating a slippery, omniphobic surface that blood and other biomaterials cannot stick to. At the time of surgery, a sterile, stable film of LP would be applied to the selectively treated TP region of the NC device. The NC would then be used as normal: engaging with electrodes and inserting them into the brain. The LP layer may be re-applied, as needed, during surgery. The LP compound would be sterilized prior to use by 0.22 micron filtration or autoclave.

Figure 1 Attachement

Illustration of a TLP surface coating, adapted from Leslie, et al.

2. Justification for Proposed Changes:

The needle/cannula (NC) device is a key component of our surgical robot: it is the part responsible for repeatedly engaging with the electrodes and reliably inserting them into the brain. After repeated contact with the brain from many cycles of insertions, the NCs may collect small amounts of blood, CSF, and other biomaterials. This biofouling impairs the NCs ability to reliably interact with our electrodes at the micron-scale precision required by our surgical approach.

Figure 2 Attachment

A. Uncoated NC biofouling is observed after inserting 3-12 electrodes. B. TLP treated NC, prior to use. C. TLP treated NC, after inserting 36 electrodes into rat cortex. The recent scientific literature has shown evidence that TLP coatings reduce adhesion and activation of blood components, reduce thrombosis in vivo, and inhibit the formation of biofilms (Leslie, et al). Our own preliminary data also supports this: uncoated NC devices become biofouled after only a few insertions (Fig 2A), whereas the TLP coated NC (Fig 2B) remains uncontaminated by blood or other biomatter after dozens of insertions (Fig 2C). Thus, TLP coatings would allow a single NC to be used for a larger number of insertions before replacement, reducing the need for ultrasonic cleaning of the device, the number of device swaps, and ultimately surgical time.

3. Potential Adverse Effects:

The use of TLPs for this application is novel and, as such, the safety profile of the compound for this application is largely unknown. However, perfluorocarbons, as a class of materials, have wide-ranging biomedical applications. One formulation has received FDA approval as blood substitute; others have been used for liquid ventilation and ophthalmic surgery (please see references below). Our specific compound, perfluoro[poly(ethyleneglycol)dialkyl ether], also known as AFP-500 or CS-1000, is being tested in human trials under an FDA IDE, although for a different intended use than we are proposing here. We are providing toxicology data that was collected in support of that IDE in the attached document (attached; please treat as confidential) in support of preclinical testing with NHPs under this protocol. Finally, the TFP treated devices would only transiently in contact with the brain, rather than permanently implanted, so the risk is lower for this reason.

While we think that the risk is low, in the event that neurologic signs are observed, they would be assessed by veterinary staff and treated according to their clinical recommendations.

Bibliography

Flaim, Stephen F. “Pharmacokinetics and Side Effects of Perfluorocarbon-Based Blood Substitutes.” Artificial Cells, Blood Substitutes, and Biotechnology, vol. 22, no. 4, 1994, pp. 1043–1054., doi:10.3109/10731199409138801.

Krafft, M. “Fluorocarbons and Fluorinated Amphiphiles in Drug Delivery and Biomedical Research.” Advanced Drug Delivery Reviews, vol. 47, no. 2-3, 2001, pp. 209–228., doi:10.1016/s0169-409x(01)00107-7.

Leslie, Daniel C., et al. "A bioinspired omniphobic surface coating on medical devices prevents thrombosis and biofouling." Nature biotechnology 32.11 (2014): 1134. www.nature.com/articles/nbt.3020.

Mitten, R. M., et al. “Dose Related Biodistribution & Elimination of 100% PFOB Emulsion.” Biomaterials, Artificial Cells and Artificial Organs, vol. 16, no. 1-3, 1988, pp. 683–684., doi:10.3109/10731198809132639.

Noveck, Robert J., et al. “Randomized Safety Studies of Intravenous Perflubron Emulsion. II. Effects on Immune Function in Healthy Volunteers.” Anesthesia & Analgesia, vol. 91, no. 4, 2000, pp. 812–822., doi:10.1097/00000539-200010000-00009.

Wahr, Joyce A., et al. “A Pilot Study of the Effects of a Perflubron Emulsion, AF 0104, on Mixed Venous Oxygen Tension in Anesthetized Surgical Patients.” Anesthesia & Analgesia, vol. 82, no. 1, 1996, pp. 103–107., doi:10.1213/00000539-199601000-00018.

4. Additional Animals:

We request two (2) additional animals in the Terminal Group (group 1).

5. Justification for Additional Animals:

Refinements are initially validated in the Terminal Group, which allows us to assess acute performance and refine the surgical approach, followed by testing in Safety Device Group, for which we assess short-term implant safety and performance characteristics that cannot be assessed in terminal surgeries.

After initial testing of the TLP coating refinement in a terminal surgery, we may make minor changes that would require additional testing. Therefore we expect to need two additional animals in the Terminal Group.

Uploaded Documents:

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DocUpload-20-86335-302585_Amendment.pdf

Amendment Request Status: Approved - 03/02/2020

Amendment ID 302585

Amendment to Protocol #21222
Summary/Purpose: *Temporary Affiliate (non-UCD) Personnel Addition* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 02-25-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 03-05-2020**

1. Proposed Changes:

We would like to add the following people to the protocol:

1. [redacted], B.S. Biological Science. [redacted] is a Registered Lab Animal Technician (RLAT), AALAS (December 2018) and a current lab animal technician II at Standford School of medicine caring for a variety of animal species including mice, rats, fish, frogs, turtles and birds. [redacted] role at the Primate Center will be to work with the behavioral team and may come in regular contact with NHPs. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

2. [redacted], B.S. Electrical Engineering. [redacted] role at the Primate Center will be to perform ephys and thermal measurements in close proximity of NHPs. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

2. Justification for Proposed Changes:

n/a

3. Potential Adverse Effects:

n/a

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 03/05/2020

Amendment ID 303482

Amendment to Protocol #21222
Summary/Purpose: *Temporary Affiliate (non-UCD) Personnel Addition* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 03-13-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 04-15-2020**

1. Proposed Changes:

We would like to add the following person to the protocol:

[redacted], M.S. Mechanical Engineering from Georgia Institute of Technology. [redacted] role at the Primate Center will be to work with the OR engineering team in the OR and may come in regular contact with NHPs. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

2. Justification for Proposed Changes:

n/a

3. Potential Adverse Effects:

n/a

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 04/15/2020

Amendment ID 303857

Amendment to Protocol #21222
Summary/Purpose: *Longer screws for temporary implant fixation* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 02-21-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 05-01-2020**

1. Proposed Changes:

We would like to use longer bone screws (up to 9 mm long) to secure the temporary implant carrier mechanism onto the skull. These screws would not be inserted to their full length, which would be incompatible with the thickness of the rhesus skull. Rather the screws would be partially inserted to a sufficient depth to temporarily fixate the implant carrier mechanism and the remaining length would protrude outside of the skull. We believe this would better secure the temporary mechanism if it happens to sit too high due to skull curvature for the currently maximum approved 5 mm bone screws (Fig 1).

Figure 1. Photograph of the implant carrier mechanism on macaque skull proxy. A 7 mm long screw is indicated.

2. Justification for Proposed Changes:

Without longer screws, the implant carrier mechanism may not be sufficiently secured for successful electrode insertion or implant placement.

Whenever possible we will use skull thickness data from pre-surgical medical imaging to determine the maximum depth that the screws may be inserted (medical imaging may not always be available). Note, however, that it is not our intention to drive the screws to the thickness of the bone, as we will not use these screws for permanent device fixation. Rather we wish to temporarily fixate the device, so these screws will be inserted to the minimum depth necessary to serve this purpose.

3. Potential Adverse Effects:

Over-screwing the longer screws could lead to the bone screw passing through the inner table of the bone and impacting the brain. We would mitigate this by inserting bone screws to the minimum depth required to achieve mechanism stability. This same potential adverse effect also exists in the approved protocol; animals will be monitored continuously during the surgery and until recovered from anesthesia and any neurological signs would be assessed and treated per CNPRC vetstaff recommendations.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Amendment Request Status: Approved - 05/01/2020

Amendment ID 303464

Amendment to Protocol #21222
Summary/Purpose: *Animal Transfer Facility Change* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 05-01-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 06-08-2020**

1. Proposed Changes:

The approved protocol amendment (Novemberr 2019) allows the transfer of up to six animals from groups 1, 2 or 3 to [redacted] ([redacted]). This amendment changes the receiving location to a Neuralink owned, USDA registered research facility, located in [redacted], with an active IACUC protocol to support the continued study. All other aspects of animal transfer would proceed as previously approved.

2. Justification for Proposed Changes:

Neuralink is no longer engaged in research at [redacted].

3. Potential Adverse Effects:

No adverse effects are expected other than the minor stress of transportation. This adverse effect exists on the approved protocol.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 06/08/2020

Amendment ID 304311

Amendment to Protocol #21222
Summary/Purpose: *Temporary Affiliate (non-UCD) Personnel Addition* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 07-23-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 08-22-2019**

1. Proposed Changes:

We would like to add [redacted] to the IACUC roster list, he is a visiting veterinarian.

2. Justification for Proposed Changes:

Dr. [redacted] is an ACLAM boarded veterinarian who specializes in the anesthesia, surgery, and medical care of large laboratory animals. Dr [redacted] has 8 years experience working with a range of NHP species as a clinical veterinarian at Columbia University and Stanford University. Dr. [redacted] activities on this project will be limited to research --- for example, assisting, advising and participating in primate neurosurgeries. All clinical care and clinical decisions will be deferred to CNPRC Veterinary Staff.

The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

3. Potential Adverse Effects:

N/A

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 08/22/2019

Amendment ID 299617

Amendment to Protocol #21222
Summary/Purpose: *Implant Surface Treatment* [edit]
PI:(b) (6), (b) (7)(C)
Date Received: 09-06-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-15-2019**

1. Proposed Changes:

PURPOSE

The purpose of this amendment is to clarify that we may use surface treatments on the exterior of our devices with the intention of promoting soft-tissue integration. We will use approved materials, e.g. titanium, and selectively treat a region using an additive manufacturing process.

With respect to disinfection, the porous coated portion is intended to be always under the skin; the portion which protrudes would be smooth. The proportion of porous to smooth in the current design is based on measurements we made of skin and muscle thickness on 8+ male cadaver terminal subjects.

The surface treatment described as porous coating is manufactured by applying multiple layers of asymmetrical titanium particles to the base material using a high temperature sintering process. An uncoated, or porous-coated percutaneous port may also have a hydroxyapatite coating, which is layered over the raw material alone, or as a second layer, on a porous titanium coating.

There are two attached figures. One figure shows one instance of a surface treatment on the percutaneous port. In this example, the skin interface region is selectively coated with porous grade 2 titanium particles; the portion above the skin margin is left smooth for ease of cleaning.

A newly attached figure shows the smooth portion of the porous coated portion of the implant and how it is intended to be always under the skin; the portion which protrudes would be smooth.

2. Justification for Proposed Changes:

Research studies have shown porous titanium surface treatments reduce infection risk and promote soft tissue integration at skin margins:

Isackson, D., McGill, L. D., & Bachus, K. N. (2011). Percutaneous implants with porous titanium dermal barriers: an in vivo evaluation of infection risk. Medical engineering & physics, 33(4), 418–426. doi:10.1016/j.medengphy.2010.11.007. PMCID: PMC3071885

Chimutengwende-Gordon, M., Pendegrass, C., & Blunn, G. (2017). The in vivoeffect of a porous titanium alloy flange with hydroxyapatite, silver and fibronectin coatings on soft-tissue integration of intraosseous transcutaneous amputation prostheses.

The bone & joint journal, 99-B(3), 393–400. doi:10.1302/0301-620X.99B3.BJJ-2016-0360.R1 PMCID: PMC5358203

3. Potential Adverse Effects:

None.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
D U l ad-10 86335-300780 Amend t jpg
DocUpload-11-86335-300780 Amendment.pdf

Amendment Request Status: Approved - 10/15/2019

Amendment ID 300780

Amendment to Protocol #21222
Summary/Purpose: *Neural Implant Refinements - N1 Device and Rev 8 Surgical Robot* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 09-11-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-17-2019**

1. Proposed Changes:

PURPOSE: The purpose of this amendment is to describe a refined neural implant device ("N1 Device"). This new device is much smaller than the previous version, thus more individual devices may fit on the head: we may implant up to ten (10) of them in a single animal. The N1 Device also requires a modified surgical approach---including the temporary fixation of a device "carrier" to the cranium---and must be paired with a more refined and capable surgical robot ("Rev 8 Surgical Robot"), with different imaging and pia dissection capabilities. Below we enumerate the specific differences in device and surgical approach, which are illustrated in the attached document:

Craniotomies: The size of each individual craniotomy for the N1 Device shrinks from at most 25 mm in diameter to at most 20 mm in diameter. The maximum number of craniotomies per animal increases from 4 to 10. These craniotomies may be made by drill, craniotome or auto-stopping perforator. We are currently approved for a maximum of 4x 25 mm diameter craniotomies, or roughly 1,963 mm2 of removed bone. We will not exceed that total area, although the total number of craniotomies may go up to 10. For example, 10x 14 mm diameter craniotomies is roughly 1,539 mm2. This and other combinations that remove the same or less total bone area as the approved protocol may be used.

Three limitations on craniotomy size and number will be implemented for neural implantation:

1. No individual craniotomy will be larger than 20 mm in diameter.

2. We will place no more than 10 craniotomies per animal.

3. The total surface area of removed bone will be limited to the previously approved ~ 1,963 mm2.

Threads: The number of threads (filaments) per array was previously specified as 32-64; this range increases to 16-128. The individual thread cross-section increases slightly to 14x6 microns. The total number of threads implanted per craniotomy decreases from 1000 to 400 threads; the total number of thread insertions per animal stays constant at 4000 threads.

Device enclosure: The enclosure for the N1 device is smaller than the previous device (now: 8 mm wide vs before: 30 mm wide) and is designed to fill the craniotomy rather than being fastened to the skull adjacent to the craniotomy. The device is sealed with a molding made of implant grade silicone and, as before, has "tabs" for anchoring with bone screws. The space around the implant may be filled with fibrin, gelfoam, bone wax or acrylic. We may cover the entire device and burr-hole with an additional flat burr-hole cover, which will either be custom designed or be a standard FDA-approved device.

Temporary carrier: For implantation, each N1 device is reversibly attached to an implant mechanism ("carrier") made of stainless steel or titanium alloy. This carrier is temporarily secured to the cranium at the site of a craniotomy by up to 4 standard cranial screws (diameter: 1.5 mm, length: 4 to 5 mm). After the threads for that array are inserted into the brain, the N1 device is secured to the cranium by 2 standard cranial screws and the carrier and the four temporary fixation screws are removed. Thus for the maximum implantation of ten N1 devices, 60 screws would be used, 40 of which would be temporary. The screw holes resulting from the temporary carriers may be filled with bone wax or dental acrylic. As before, we may sculpt the outer table and diploic spaces of the skull (bone thinning) to allow space for the N1 device or temporary carrier.

Percutaneous connectors: Previously there was a single percutaneous connector per implanted device ("pill-box"). Now, a single connector can service several N1 devices, so the total number of connectors per animal will remain the same (i.e., a maximum of 2). The size of the connector for the N1 device increases slightly from a diameter of 14 mm to a diameter of 16 mm. The percutaneous connector will be made of titanium and may have a patterned surface to alter the porosity of the part to promote skin adhesion. These connectors will remain compatible with the application of the biopatch.

Implanted leads: The individual N1 devices would be connected to the percutaneous connectors by implanted leads (diameter < 2 mm) which would be tunneled under the skin. These leads may be insulated by PTFE ("Teflon"), polyurethane, Perfluoroalkoxy alkane (PFA) and/or implant-grade silicone. To prevent cable

migration we may create a shallow channel in the cranium for routing the cable or fasten the cables to the cranium using titanium plates/bone screws .

Optical Coherence Tomography (OCT): We may use intraoperative OCT imaging, which scans an infrared laser to capture a 3D volumetric image of the brain surface and brain motion.

Infrared (IR) nanosecond laser: In addition to the previously approved UV laser, we may use an IR laser to microdissect the pia-arachnoid complex (PAC) before each insertion. The size of individual holes in the PAC may be up to 500 um in diameter, but are expected to be typically under 250 um.

2. Justification for Proposed Changes:

The N1 device encompasses multiple refinements designed to enhance its safety, longevity and capabilities, making it more suitable for human clinical translation:

It's significantly smaller: each individual device and associated craniotomy is ~4x smaller than the previous design. Moreover, the device has a lower profile when implanted, which should lead to less skin tenting and reduce the risk of skin erosion.

Path to hermeticity: the implant was designed to support truly hermetic packaging through laser welded seals, which we are currently developing.

Access to more brain regions: the smaller individual devices allow for access to a wider variety of brain regions as well as the placement of more total devices in an individual subject

The Rev 8 surgical robot also encompasses a number of refinements, in particular:

Can access more brain regions: the robot has additional angular degrees of freedom and has a smaller/slimmer inserter head, both of which allow it to access more challenging brain regions, e.g. very lateral cortical areas or regions located deep in a sulcus.

Optical Coherence Tomography (OCT) imaging: this gives the robot non-contact 3D to tracking of the brain surface, giving better accuracy and reducing the risk of unintentional brain contact.

Infrared (IR) nanosecond laser: this allows for the microdissection (ablation) of the pia-arachnoid complex. Such microdissection would allow the insertion needle to penetrate the brain with lower insertion forces, leading to potentially improved device longevity and surgical outcomes.

3. Potential Adverse Effects:

N1 Implant:

The use of temporary bone screws will lead to a number of holes in the cranium and may undermine the bone. We have designed the temporary carrier with positions for four screws, but may not need to use all of these; we will use the fewest number of screws that provides stable fixation. We expect that the screw holes will quickly close with new bone growth.

Since there will be more individual implants, there will also be more subcutaneous leads. These leads may migrate under the skin, causing inflammation and skin erosion. If an animal presents skin defects (ulcerations) near the implant, we will consult with CNPRC veterinary staff on the best course of treatment. Possible treatments could include antibiotic therapy, a repair procedure or, in severe cases, the removal of the animal from the study and euthanasia.

Rev 8 Surgical Robot:

The needle used by the surgical robot to insert threads could break and leave shards in the brain. We have never observed this failure in previous NHP experiments, however as the Rev 8 robot is capable of inserting deeper into the brain, there may be an increased risk. This risk is mitigated by mechanical design validation and benchtop testing of the needles. Moreover we would conduct initial cadaver trials with the Rev 8 robot before the first terminal or survival subjects. If needle breakage does occur, we will consult with CNPRC vets on the best plan of action, which may include leaving the shard in situ. If the shard causes significant brain trauma, bleeding or recovered animals exhibit lasting neurological deficits that affect the ability to care for itself or lead to persistent pain or distress, they will be removed from study and euthanized.

The Rev 8 robot has more degrees of freedom and a wider range of motion than the previous design. It is possible for the robot to collide with a person in the room, the animal, or stereotaxic frame. To mitigate risk to people in the room the robot is designed to minimize crush points, and surgical procedure dictates that only the robot mechanic, who is trained and familiar with the robot motions, should be near the robot while it is motion. Motion planning/simulations and mock surgeries and are used to minimize the risk of collisions.

Laser ablation may cause bleeds on the cortical surface, similar to bleeds that may be caused by the insertion process. We would control such bleeding using drugs (e.g., thrombin) and cautery. Neurologic signs would be assessed by veterinary staff and treated according to their clinical recommendations.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
DocUpload-07-86335-300814_Amendment.pdf
DocUpload-12-86335-300814_Amendment.pdf
DocUpload-13-86335-300814_Amendment.pdf

Amendment Request Status: Approved - 10/17/2019

Amendment ID 300814

Amendment to Protocol #21222
Summary/Purpose: *Adverse Effect Amendment: Inadvertent Use of Drugs* [edit]
PI:(b) (6), (b) (7)(C) [redacted]
Date Received: 08-29-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-17-2019**

1. Proposed Changes:

PURPOSE

We would like to submit an adverse effect amendment for the inadvertent use of Bioglue and the antimicrobial, bacitracin.

SUMMARY

On August 19, 2019, NRL performed a terminal surgical procedure in preparation for a scheduled upcoming survival surgery (Aug. 26, 2019). The purpose of the procedure was to collect post-operative electrophysiology data and tissue temperature data via thermocouple temperature sensors affixed to the animal subject. In addition to the Aug. 19th scheduled surgery, coordinated plans were made in advance between the CNPRC and NRL pathology teams to train the CNPRC Pathology Technicians stepwise on how to explant the implant in preparation for an after hours emergency.

At the time of surgery set up (~7:30am), the surgical irrigation fluids were primed with the antimicrobial bacitracin (50U/L of sterile saline). During surgery, bilateral craniotomies/durectomies were performed and electrode threads were implanted in one craniotomy and the thermocouple wire placed in the contralateral craniotomy . Furthermore, bilateral pillboxes and a unilateral external connector port was affixed to the animal subject caudal to the location of the craniotomies. At the time of skin closing (~2:00pm), the lead surgeon had concerns about the void in between the two implants and applied Bioglue to fill the dead space in between the implants on midline. After skin closure, electrophysiology and temperature data were collected for approximately 1 ½ hours before the AHT delivered the live animal to the Pathology Service [~4:00pm], where the animal was euthanized, perfused and explanted.

Gross presentation of the animal at necropsy to the Pathologist on duty revealed Bioglue had reached the surface of the brain. CNPRC Pathology Technicians noted having to trim excess Bioglue at the rim of the craniotomies to be able to remove the calvaria and preserve the brain.

DEVIATION FROM PROTOCOL

According to protocol, Bioglue and bacitracin were not listed for approved use. The protocol is a composite of a previous withdrawn protocol and miscellaneous amendments. One past amendment addressed the adverse effect of Bioglue coming in contact with an animal subject's brain surface. The preventative action arising from this event was to discontinue the use of Bioglue. Bioglue is marketed by CryoLife, Inc. as a surgical adhesive and review of the product safety information discloses warnings from previous animal studies showing "acute nerve injury" when directly applied to phrenic nerves." With respect to the use of bacitracin on protocol, the adverse effects section of the protocol [15C] stipulates the "use of antibiotic impregnated sterile flush for surgical irrigation" but did not list bacitracin in the drug table. Moving forward, we may use bacitracin (50U/L of sterile saline) in terminal and survival surgical procedures.

2. Justification for Proposed Changes:

The NRL lead surgeon did not realize that the use of Bioglue had been discontinued and that Bioglue and bacitracin were not listed as approved drugs on the protocol drug table.

To prevent future deviations from protocol, NRL is implementing a comprehensive retraining program for all ranking NRL team roster members listed on protocol about the importance and regulatory constraints and consequences of adhering to protocol.

Corrective Action Plan Moving Forward

To prevent non-compliance in the future we are putting in place i) a robust program of retraining, ii) a procedure review process, including iii) the use of checklists in planning for procedures, and iv) an update to the Neuralink IACUC training policy. We elaborate on these next: i) Retraining: We will re-train our animal users about their responsibilities in complying with the protocol, with an emphasis on each person's individual accountability.

This retraining will be provided via in-person training sessions and consist of a presentation of material followed by a quiz to assess competence.

Topics will include: - Background on federal regulations - How to access the protocol - The importance of following protocol - A review of the different sections of the protocol - A review of procedure checklists (see below) - Who to contact if there are any questions

The quiz will consist of a checklist for a hypothetical procedure under our approved protocol with some unapproved procedures, materials and drugs mixed in; the users will need to identify the unapproved items to pass the test. Once the training session has been completed, the roster of passing users will be provided to the UC Davis IACUC.

ii) Procedure Review: A procedure review packet will be created for each scheduled surgical procedure. This packet will include a brief description of the procedure, a checklist (see below) and a signature page. Refinements and other approved changes from previous procedures will be emphasized. All personnel participating in the surgical procedure will be required to review the procedure and sign off on the signature page at least 24 hours before the scheduled date. These documents will be brought to the planned surgical procedures and will be reviewable by CNPRC on request.

An example procedure review packet is attached to this amendment.

iii) Checklists: We will create checklists for each of our planned surgical procedures. These checklists will include a list of materials, chemicals and pharmaceuticals that we intend to use and a step-by-step break down of our planned procedures. This checklist will be brought to procedures (as a paper copy, and ideally electronically displayed in the procedure room) so that each drug/device can be easily checked against the protocol. In this way the process will be transparent and accountable to the CNPRC staff in the operating room. One or two Neuralink personnel who will be involved in the procedure (for example, the lead surgeon and scrub nurse) will be designated the responsibility of reviewing the checklist prior to each planned procedure and sign off that they have compared it to the currently approved protocol. An example checklist is included here.

iv) Neuralink IACUC Training Policy Update: The one-time retraining course (described above) has been added as a new mandatory hands-on training course to Neuralink's internal IACUC animal user training policy. All new personnel will be required by the Neuralink IACUC to complete this training prior to being added onto the Davis protocol and a refresher course is required every three years. This training documentation will be provided to the Davis IACUC.

3. Potential Adverse Effects:

To prevent any deviation in protocol in the future, we have put forth a retraining program structured on knowing the details contained within the protocol at all times. All listed protocol roster members will have a working knowledge of the protocol details and if at any point there is uncertainty, all listed personnel agree to seek clarification before proceeding accordingly. Conjointly, if and when a protocol concern is identified, NRL and CNPRC personnel will work together to address the issue to be able to ensure animal welfare and personnel safety.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
DocUpload-02-86335-300555_Amendment.pdf
DocUpload-03-86335-300555_Amendment.pdf
DocUpload-04-86335-300555_Amendment.pdf
DocUpload-05-86335-300555_Amendment.pdf

Amendment Request Status: Approved - 10/17/2019

Amendment ID 300555

Amendment to Protocol #21222
Summary/Purpose: *Animal Transfer Facility Change - remaining animals on study* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 10-15-2020
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-29-2020**

1. Proposed Changes:

We request to transfer all remaining animals assigned to this protocol to a Neuralink operated, USDA registered research facility ([redacted], with an active IACUC protocol to support the continued study.

These animals may come from any animal group, and may have participated in minor or non-invasive procedures (e.g. behavioral training). However, none of these animals will have participated in any major survival surgeries prior to transfer. Declaration of animal group designation will occur prior to transfer for group number accounting purposes.

Transportation and relocation would be accomplished in accordance with CNPRC SOPs [BIO-01]. The CNPRC will be responsible for transport of the animals. When the animals are delivered, the receiving party will sign the USDA transportation forms, which will be returned to the Center.

2. Justification for Proposed Changes:

Expand protocol section 17 option for disposition.

It is our intention to close this protocol once these animals are transferred.

3. Potential Adverse Effects:

No adverse effects are expected other than the minor stress of transportation.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 10/29/2020

Amendment ID 306570

Amendment to Protocol #21222
Summary/Purpose: *Transfer of animals off site from CNPRC* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 10-02-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved*** - 11-12-2019

1. Proposed Changes:

We request a change in disposition for up to six (6) animals currently assigned to this protocol to be transported to [redacted]. [redacted] is a USDA registered research facility and we have an active IACUC protocol with them to support the continued study.

Transportation and relocation would be accomplished in accordance with CNPRC SOPs. In all cases, transfers would be made to USDA approved and registered facilities, with appropriate resources and experience housing and caring for macaques.

The CNPRC will be responsible for transport of the animals to [redacted], in a University owned vehicle. Once the animals are delivered to the [redacted] location, the will then be the property of Neuralink. Animal will be transported to [redacted] on behalf of Neuralink, both as animals purchased, and as animals transferred from their approved project here at the Primate Center to [redacted].

Primate Center staff will be transporting animals to [redacted] using a UC Davis vehicle. The animals are considered university property until they arrive on site at [redacted] and at that time they become the property of Neuralink. When the animals are delivered a receiving party at [redacted] will sign the USDA transportation forms, which will be returned to the Center.

2. Justification for Proposed Changes:

These animals may come from animal groups 1, 2 or 3 (we anticipate two from each group) and may have participated in minor or non-invasive procedures (e.g. behavioral training or biofluid collection, depending on the animal group). Animals would not have received neural implants prior to transfer. Declaration of animal group designation will occur prior to transfer from CNPRC for group number accounting purposes.

3. Potential Adverse Effects:

No adverse effects are expected other than the minor stress of transportation.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 11/12/2019

Amendment ID 301526

Amendment to Protocol #21222
Summary/Purpose: *Addition of surgeon to roster* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 11-06-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 11-18-2019**

1. Proposed Changes:

We request the addition of [redacted] to the roster of surgeons (Section 14e).

2. Justification for Proposed Changes:

[redacted]

PhD in visual neuroscience from [redacted] with 25 years experience of working with rhesus macaques and performing brain surgery.

The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

3. Potential Adverse Effects:

N/A

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

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Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 11/18/2019

Amendment ID 302150

Amendment to Protocol #21222
Summary/Purpose: *Addition of surgeon to roster* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 11-06-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 11-18-2019**

1. Proposed Changes:

We request the addition of [redacted] to the roster of surgeons (Section 14e).

2. Justification for Proposed Changes:

[redacted]

PhD in visual neuroscience from [redacted] with 25 years experience of working with rhesus macaques and performing brain surgery.

The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

3. Potential Adverse Effects:

N/A

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
No Files Found.

Amendment Request Status: Approved - 11/18/2019

Amendment ID 302150

Amendment to Protocol #21222
Summary/Purpose: *Burr holes for surgical irrigation and suction* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 11-04-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 12-03-2019**

1. Proposed Changes:

PURPOSE: The purpose of this amendment is to add the option of placing additional small burr holes adjacent to the craniotomies used for electrode insertion. These additional holes would be used for surgical irrigation, suction and/or similar surgical needs (e.g. applying fibrin sealant).

PROCEDURE: Up to two (2) holes may be placed adjacent to each craniotomy to permit the introduction of a surgical instrument into that space. These may be drilled at an angle so as to penetrate the sidewall of the craniotomy. At least 1 mm of bone would be left intact between holes. The holes will be made as small as possible (up to a maximum diameter of 3 mm): for example, a 1.8 mm diameter hole would be the smallest that would permit the introduction of a 15 gauge suction tip. We would use a small flexible PVC tube fitting or a standard neurosurgical tool (e.g. 4 french Fukushima suction tube). The tool may be held by the carrier mechanism or another fixture. On closure, the holes may be filled with an approved material or left unfilled per veterinary recommendation. A diagram showing a possible arrangement is included.

2. Justification for Proposed Changes:

As the size of the craniotomies that we use for electrode insertion has shrunk, it has become more challenging for standard surgical tools to function in that space. For example, the use of a standard manually operated suction tool risks dislodging inserted threads. Irrigation and suction is required to control the small bleeds associated with the needle insertion, if not controlled this makes the rest of the surgical field unavailable for sewing. Therefore this revision makes the required irrigation/suction possible while keeping the small, refined, craniotomies.

3. Potential Adverse Effects:

The isthmus of bone between the holes may chip off. If this happens we will remove the bone fragments and smooth any sharp edges. Irrigation/suction may block due to the small size of the catheter tips. In this case, either the catheters will be replaced, or standard bulb syringe and suction will be used.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
DocUpload-16-86335-302066_Amendment.png

Amendment Request Status: Approved - 12/03/2019

Amendment ID 302066

Amendment to Protocol #21222
Summary/Purpose: *Additional sealant materials* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 11-21-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 12-05-2019**

1. Proposed Changes:

We would like to add two additional material options for sealing dura, bone, or other tissues around our devices at time of implantation:

Integra DuraSeal Exact, a hydrogel based dura sealant polymer. This would be used as an alternative to fibrin sealant.

https://www.integralife.com/file/general/1453798341.pdf

AND

Ethicon Surgiflo, a flowable gelatin matrix impregnated with Thrombin. This would be used as an alternative to thrombin impregnated gelfoam.

https://www.jnjmedicaldevices.com/en-US/product/surgiflo-hemostatic-matrix-kit

Both of these are FDA approved medical devices, and would be provided and used sterile.

CONTRAINDICATIONS:

Duraseal: Do not apply the DuraSeal® Exact hydrogel to confined bony structures where nerves and spinal cord are present since neural compression may result due to hydrogel swelling. The hydrogel may swell up to 12% of its size in any dimension.

Surgiflo: • Do not use SURGIFLO® in intravascular compartments because of the risk of embolization. • Do not use SURGIFLO® in patients with known allergies to porcine gelatin. • Do not use SURGIFLO® in closure of skin incisions because it may interfere with the healing of skin edges. This interference is due to mechanical interposition of gelatin and is not secondary to intrinsic interference with wound healing.

2. Justification for Proposed Changes:

Fibrin sealant (Tisseel) and Thrombin are currently in very short supply. These two alternative materials have similar functions / properties and would allow us to proceed in the event that we could not source those materials.

3. Potential Adverse Effects:

These are both FDA approved materials so we do not expect any adverse effects. While we think that the risk is low, in the event that neurologic signs are observed, the animals would be assessed by veterinary staff and treated according to their clinical recommendations.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
DocUpload-17-86335-302396_Amendment.pdf

Amendment Request Status: Approved - 12/05/2019

Amendment ID 302396

Amendment to Protocol #21222
Summary/Purpose: *Electromagnetic Marker Body Tracking* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 09-03-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 12-18-2019**

1. Proposed Changes:

The purpose of this amendment is to permit the tracking of the body of chair-trained animals with wired electromagnetic markers. These markers would allow accurate tracking of multiple body parts as the animal performs behavioral tasks.

This would require acclimating the animals to having markers placed on their body. These markers would be secured to the animal (e.g. placed on the forelimb or hand with a velcro strap or a mild adhesive), or embedded in an article of clothing (e.g. a sleeve or vest). Each marker would be tethered by a flexible wire---carrying motion data---and will be placed on the animals while they are chaired and therefore unable to reach their mouths with their hands. The wires will be routed so as not to cause discomfort or constrain movements. The manner of securing the markers to the animals will not cause discomfort or abrasion. Up to eight markers may be placed on an animal at a time.

Chaired sessions with or without electromagnetic body tracking will be limited to five (5) hours at a time and a total of no more than five (5) hours total over the course of a single day. As an example, a typical day might include an hour-long session in the morning and another hour-long session in the afternoon.

An example of a wired electromagnetic marker that we may use is the Polhemus Micro Sensor 1.8, which is shown in the attached image along with a diagram of the chair and behavioral apparatus.

2. Justification for Proposed Changes:

We are currently tracking the body with a camera-based position tracking system. While the non-invasiveness of camera-based tracking has its own advantages, there are also several major limitations:

Camera tracking is limited by line-of-sight, i.e. occlusions degrade tracking quality.

Camera tracking has a spatial precision that is limited by camera frame size---and using larger camera frames to compensate generally results in lower frame rates (i.e. lower temporal resolution).

Camera tracking is generally limited to two spatial coordinates, i.e. movement in a plane.

Electromagnetic tracking eases all of these restrictions: it would permit us to track multiple simultaneous markers with up to 6 degrees-of-freedom (DoF: x, y, z, roll, pitch, yaw), at high spatial resolution (< 1 mm) and at high-sampling rates (> 200 Hz) without occlusions or line-of-sight limitations.

3. Potential Adverse Effects:

No potential for adverse effects because the electromagnetic markers will be placed on the animal only when chair restrained. Therefore, the electromagnetic markers do not pose an ingestion risk because the animal's hands will be unable to reach their mouths.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
DocUpload-06-86335-300577_Amendment.png
DocUpload-09-86335-300577_Amendment.png
DocUpload-14-86335-300577_Amendment.jpg

Amendment Request Status: Approved - 12/18/2019

Amendment ID 300577

PROTOCOL FOR ANIMAL USE & CARE	Protocol #: 21222 Date Expires: 07-11-2021

1. Contacts

Primary Investigator		Alternate Contact	
Name:	[redacted]	**Name:**	[redacted]
E-mail:	[redacted]	**E-mail:**	[redacted]
Department:	CA National Primate Research Center [redacted]	**Department:**	CA National Primate Research Center
Telephone:	[redacted]	**Telephone:**	[redacted]
After Hours:	[redacted]	**After Hours:**	[redacted]

**Primary contact for sick animals*

2. Title

Development of a Large-Scale Brain-Machine Interface in Rhesus Macaques

3. Protocol Type

Research

4. Species

Common Names	Total Number for Study	Name of Source of the Animals
primate - *Rhesus macaque*	25	CNPRC
primate - - *Rhesus macaque*	4	CNPRC-- Amendments

USDA: Yes
Detrimental Species: No

5. Brief Summary of Procedures

The purpose of this study is to test novel brain-machine interface (BMI) devices in macaque monkeys. This will include device implantation and data collection. We will implant a novel large-scale, stable BMI device in animals that may be trained to perform a variety of sensory, motor, and cognitive tasks using computer interface devices, e.g. hand tracking, a joystick, or a touch screen.

6. Animal Location(s)

Study Area/Laboratory:

Location/Building - Room
[redacted]
[redacted]
[redacted]
[redacted]

Overnight Housing (vivarium):

Vivarium(s)
California National Primate Research Center

Animals will be maintained by:

Vivarium

7. Special Husbandry Requirements:

Food scheduling will be requested to deliver daily rations during training & testing sessions. Meals not consumed during training & testing will be provided in enrichment devices following that meal. Lab behavior staff will coordinate with CNPRC staff to ensure that animals receive the standard daily caloric intake. Our plan is to use the MER system (Maintenance Energy Requirement) to determine the animal's caloric intake and adjust our rewards to meet the animal's needs. Vet staff will be consulted to determine caloric value of food types offered and to help ensure a healthy diet. Minimum recommended daily food levels will be obtained from CNPRC veterinary staff. Delivery systems will precisely track the amount calories delivered during training sessions. On a daily basis, we will record the total quantity of food being delivered to the animal during behavioral training & testing, the supplemental quantity given at the end of the day, and the overall total caloric intake. These records will be readily accessible to CNPRC staff. Additional special husbandry requirements include the use of a lavender oil diffuser to transmit lavender aromas in animal rooms exclusively housing project animals affiliated with this protocol. Two suitable manufactures of lavender essential oil have been identified: 1) The Farmer's Wife Essential Lavender Oil 2) Naska Essential Lavender Oil. The justification of exposing diffused lavender oil to project animals is supported by literature citing the calming and stimulating effects associated with lavender (Koulivand, et al., 2013). Koulivand, P. H., Khaleghi Ghadiri, M., & Gorji, A. (2013). Lavender and the nervous system. Evidence-based complementary and alternative medicine : eCAM, 2013, 681304. doi:10.1155/2013/681304

8. Hazardous Materials:

No

9. Special Procedures and/or Activities:

Anesthetics/Tranquilizers/Sedatives
Survival Surgical Procedures
Terminal Surgical Procedures
Multiple Major Survival Surgical Procedures
Prolonged Restraint

Justification for Multiple Major Survival Surgical Procedures:

The major survival surgical procedure of this project is the implantation of a large-scale neural interface device. The neural interface device may have several modular sub-components ("boxes") which allow the implantation procedure to be broken up into multiple distinct steps. For example, for a neural interface subdivided across two modules there are two steps: 1) a craniotomy and neural interface implantation in one location and 2) a craniotomy and neural interface implantation at a second location. In some instances, multiple neural interface modules could access to the brain through a single craniotomy. A device subdivided across more modules or more craniotomies would permit the procedure to be subdivided into more steps. We expect to do all of these steps in a single surgical procedure. However, it may take too long to perform all steps in a single surgery without risk of a longer recovery period or additional adverse effects. Therefore, these steps may be performed in up to two (2) separate surgical sessions with a minimum of seven (7) days of recovery between the surgeries. Initial studies may be required to determine the best distribution of steps across surgical sessions.

An additional possible major survival surgery is for the repair of the implanted device, if it becomes damaged or fails. We do not expect this to happen, but it if it does, the implant can be repaired in place. We do not expect the need to perform more than one or two repair procedures per animal. If the repair is simple and does not require placing the animal into a stereotaxic frame, and the approach is minimally invasive, the repair can be done with injectable sedation. If the repair requires a more invasive approach, e.g. debriding tissue, or if it requires the use of the stereotaxic frame for mechanical stability, then isoflurane anesthesia will be used and supportive monitoring and analgesic procedures for major surgery will be used. All such repairs will be planned and performed in consultation with veterinary staff.

We note that while some animals covered in this protocol may undergo multiple major survival procedures, other will be designated for terminal procedures only (study grouping rationale and numbers are described in section 13e,f).

Justification for Prolonged Restraint:

We may train some animals to enter a "chair", a plastic box which provides a physical barrier between the animal and staff and keeps the animal in an upright posture without immobilizing any portion of the body. In the event that an animal is unwilling to voluntarily put its head up through the neck plate of the box chair (after several attempts and consultation with the CNPRC Behavioral Management Staff), we would like the option to sedate the animal according to SOP FF-05 and have the animal fitted for a traditional primate collar. The collar would only be used as an aid to assist and bring the animal's head above the neck plate. Animals will be chair restrained for a maximum of five (5) hours over the course of a single day. They may be chair restrained multiple times in a single day: for example, a typical day could include an hour-long session in the morning and another hour-long session in the afternoon. Chair restraint may be performed every day, including weekends, but would typically be performed on weekdays only. Weekend chairing, if performed, would be done in coordination with CNPRC core staff. While chair restrained, the animal will be continuously monitored by either a behaviorist in the room with the animal or via a live video feed. Animals will be removed and returned to their home cages if they display any signs of pain or discomfort.

For head fixation, we use custom molded pad assemblies ("pillows") that comfortably fit either side of the animal's head (see Fig. 2). Each pillow consists of individual gel pads that are affixed to the box chair. The pads are custom fitted to the animal's cheek/jaw/ear area to prevent the animals from turning its head. Animals are not expected to be restrained for longer than five (5) hours at a time in the box chair.We will slowly acclimate the animal to head fixation. During conditioning, the pillows are successively advanced closer to the sides of the animal's head for increasing periods of time until they gently cradle the head in a fixed position. If an animal cannot be acclimated to the pillows, our last resort will be a head-post implant.

The use of head fixation is required for several reasons. First, we require access to the head to inspect and, as necessary, clean the margin of the percutaneous connectors of the neural interface device. Second, we need to frequently collect data on the performance of the implant, e.g. electrode impedance values, number of neurons recorded, and stimulation threshold to evoke a local neural response. Chairing, head fixation and margin cleaning would only be performed by trained personnel.

10. Funding Source(s):

Neuralink Corp.

11. Veterinary Care:

California National Primate Research Center

12. Objectives and Significance:

Objectives:

The long-term goal of this work is to develop a scalable, stable and safe brain-machine interface (BMI) for human use. These devices will permit a high-fidelity readout of neural signals from brain-scale functional circuits and allow for stimulation of those circuits with complex spatiotemporal patterns. This protocol uses macaque monkeys as a model to study long-term device performance and to develop clinically-relevant applications for these devices.

Specifically, we will implant the BMI device using a novel system for the automated insertion of large numbers of ultra-fine (micron-scale) and ultra-flexible electrodes to individually targeted regions of the macaque brain. We will study the long-term performance of these devices by tracking variables such as the number of neurons recorded and the impedance of the electrodes. In parallel, we develop applications for these BMI devices through behavioral testing with a range of sensory, motor, and cognitive tasks. Finally, at the end of the experiment, animals will be euthanized and histological analysis will reveal the long-term health of the device-tissue interface.

Significance:

BMIs can be used to treat a wide range of clinical disorders, including neurological and neuropsychiatric disease and sensory and motor dysfunction. However, clinical adoption of BMI treatments has been hindered by the lack of safe and stable BMI devices that provide the large-scale brain coverage required for many of these clinical applications. We will develop and test such a system in macaque as a precursor to human

clinical trials. Furthermore, we develop software and training protocols to expand the range of functionality of these devices.

13. The 3 R's - Refinement, Replacement, and Reduction:
a) Database Search for Alternatives:

1) Does this project involve USDA covered species? **Yes**

2) Does this protocol involve procedures that may cause or have the potential to cause more than momentary pain or distress? **Yes**
This would include surgery, ocular or dermal toxicity testing, inflammatory disease models, use of noxious stimuli, etc..

Database Name	Years Covered	Keywords/Search Strategy	Date
PubMed/Medline	2009-2019	non-invasive brain-machine interface, non-invasive brain-computer interface, craniotomy macaque, (durectomy or durotomy) macaque, cranial implant refinement, positive reinforcement training macaque, chair restraint macaque, vasectomy macaque	05-13-2019
NIH Reporter	2009-2019	non-invasive brain-machine interface, non-invasive brain-computer interface, craniotomy macaque, (durectomy or durotomy) macaque, cranial implant refinement, positive reinforcement training macaque, chair restraint macaque, vasectomy macaque	05-13-2019

b) Refinement:

Based on the literature searches above, as well as our knowledge of the field from publications, meetings and colleagues, we do not believe that there are non-invasive alternatives to a surgically-implanted BMI that will allow us to a) acquire high-fidelity readout of neural signals from brain-scale functional circuits and b) provide complex, functional feedback via targeted stimulation. Therefore, surgical procedures are required. Our implanted devices and electrode embedding technique interweaves electrodes throughout targeted cortical layers thereby minimizing neuron displacement. This design is a key refinement in our approach. However, in their current instantiation, this means that the electrodes cannot access the cortical layers without passing through the dura mater and cranium. Therefore, a durectomy and craniotomy are necessary in gaining access to the cortical surface for electrode insertion. At present, there are no known alternative approaches to the brain without penetrating the dura and skull. Furthermore, accurate placement of these electrodes will ultimately minimize the total number of electrodes required. A key requirement for accurate placement is precise knowledge of the anatomy of the head (skull and brain), which vary significantly between animals and CT and/or MRI imaging may be required for pre-operative planning.

Lastly, we intend to develop an innovative behavioral program, in which training and testing are all ultimately conducted in the animal's home cage on an ad lib basis. To achieve this, we will combine new technology (wireless neural interfaces and cage-mounted behavioral devices) with well-researched positive reinforcement training and behavioral management techniques. Data from the non-human primate and human learning literature show that these techniques reduce perceived stress and improve the ability to learn. Nonetheless, chair restraint will be required for some procedures. There have been a few recent papers (e.g. Bliss-Moreau, et al, 2013; Ponce, et al, 2016) surveying the use of chair restraint and/or describing refinements to the chairing process using positive reinforcement and we plan adopt these and other refinements as they are developed.

Bliss-Moreau, E. Theil, J. H. & Moadab, G. (2013) Efficient Cooperative Restraint Training With Rhesus Macaques, Journal of Applied Animal Welfare Science, 16:2, 98-117, doi: 10.1080/10888705.2013.768897

Ponce, C. R., Genecin, M. P., Perez-Melara, G., & Livingstone, M. S. (2016). Automated chair-training of rhesus macaques. Journal of neuroscience methods, 263, 75–80. doi:10.1016/j.jneumeth.2016.01.024

c) Has this study been previously conducted?

No

d) Replacement (Species Rationale):

We have made extensive use of alternate models to develop and refine our system to this point. We have performed development and testing using in-vitro tissue models. We have also used post-mortem specimens, including fetal calf. Finally, we have performed extensive in-vivo testing using both acute and chronic rats.

However, the device we are developing is ultimately for use in human patients, and these alternatives cannot reproduce the extremely complex mechanical and biological properties of the primate head and brain to the level required to validate our surgical device or our implanted electrodes. In vivo testing is required to ensure that the electrodes can be precisely targeted and are able to perform after insertion. While we have validated this to the extent possible in rat, the mechanical properties of the tissue, the size of the brain, and the anatomy of the skull are radically different in the primate.

Fundamentally, the behavioral component of the work requires the use of species that can perform a wide range of complex sensory, motor, and cognitive tasks. To our knowledge, non-human primates are the only animal model that can achieve this goal. The use of macaque monkeys in particular is indicated because of the wealth of knowledge available about the brain anatomy and physiology that underlies these tasks.

e) Reduction (Animal Numbers Justification):

The workflow of this protocol outlines four (4) animal groups: a terminal surgical group, a safety testing group, a behavioral testing group, and a final special group for an exceptional individual monkey. Refinements made to the automated electrode inserter or neural interface device will be tested first in terminal surgical procedures (group 1). The safety testing group (group 2) will be used to test short-term implant safety and performance characteristics that cannot be assessed in terminal surgeries. Later project animals (group 3) would undergo long-term post-operative ephys and behavioral data recordings following device implantation. The final group (group 4) is designated for testing the most refined version of the implant in an exceptional behavioral performer.

Across all groups, we are requesting the use of 25 animals for this translational primate BMI project.

Terminal Surgical Group 1 (n=6) - Primary objective: updated device validation and parameter testing. This group of animals will primarily be used for refined versions of our implanted devices (e.g. new electrode designs or materials, improved neural interface device modules) and verification of proper electrode insertion during surgery. This goal will be achieved by performing acute electrophysiology and/or electrical stimulation prior to euthanasia to determine the optimal parameters for electrode insertion and device operation and/or through post-euthanasia histological analysis. The number of animals is not driven by a power analysis per se, but rather by a biological and engineering development loop of device testing and refinement in a group of animals with varying head metrics and anatomy. We expect to test three major device revisions in the scope of this protocol. After three cycles, we expect that the device and protocol would be sufficiently different that a protocol revision would be required in any case. Following the results of a terminal surgery [group 1], we may make minor changes to that device revision that require additional testing, which we would test in a subsequent terminal [group 1] animal. Therefore, we expect to need no more than six (6) animals to complete the validation and parameter setting process: two terminal procedures for each of the three major device revisions.

Safety Device Group 2 (n=9) - Primary objective: short-term implant safety and efficacy testing. This group of animals will be used to test implant safety and performance for a short period of time (lasting no longer than 6 months) in post-operatively implanted animals. This goal will be achieved by collecting data from the neural device and/or by post-euthanasia histology. The goals for this group are distinct from the terminal group: refinements of devices and procedures will be initially tested in the terminal surgical group [1]; the longer-term safety consequences of those devices and procedures will be tested in the safety device group [2]. When appropriate, this cohort may be used to test the safety of non-functionalized revisions of the devices. For example, different electrode designs could be fully-implanted without electronics or percutaneous connectors and tested for safety independently of other aspects of the neural device (i.e., devices lacking percutaneous connectors thereby decreasing the chance of a seeding infection). The number of animals is driven by a desire to test a minimum of three device revisions in three cohorts of animals within this group, a number selected avoid being misled by a single outlier device or animal. That is, n=3 is the smallest sample size that can be used to obtain a meaningful approximate SEM (so denominator is greater than 1) for future power analysis. Animals in this group will not be trained for task performance, but may receive some behavioral conditioning to permit awake, chaired implant cleaning, electrophysiology, and/or stimulation.

Behavioral Testing Group 3 (n=9) - Primary objective: long term implant function for brain-machine interfacing in monkeys conditioned with task performance. This goal will be achieved by performing long-term ephys data

collection in BMI-mode (e.g., task completion time, error rate, and performance generalization) in animals preconditioned to box chairing and behavioral task performance. The number of animals is not driven by a power analysis per se, but rather by an engineering development loop of algorithm testing and refinement in monkeys capable of task performance. The number of animals is driven by a desire to test a minimum of three device revisions in three cohorts of animals within this group, a number selected avoid being misled by a single outlier device or animal. That is, n=3 is the smallest sample size that can be used to obtain a meaningful approximate SEM (so denominator is greater than 1) for future power analysis. An experiment will consist of multiple animals implanted with a given revision of our neural interface device.

Special Group 4 (n=1) – Primary objective: long term behavioral testing in an exceptional monkey conditioned with task performance. The history of this animal precludes him from undergoing survival surgery or MRI imaging without special IACUC approval. The plan for this animal includes performing behavioral tasks for 1-2 years and would be prioritized for the most refined version of neural implants for this study.

f) Study Groups and Numbers Table:

Group	Species	Number of Animals	Procedures/Treatments
1 Terminal Group	primate - *Rhesus macaque*	6	pre-project health screening, CSF/blood collection, pre-op imaging (CT/MRI), +/- chair-training, terminal Sx, external implant cooling, intra-op ephys/stimulation, perfusion
2 Safety Device Group	primate - *Rhesus macaque*	9	pre-project health screening, CSF/blood collection, pre-op imaging (CT/MRI), +/- chair-training, survival surgery (2-Sx), external implant cooling, intra-op ephys/stimulation, post-op ephys/stimulation, post-op imaging (CT), +/- body tracking, 6 month maximum endpoint, terminal Sx +/- explant, perfusion
3 Behavioral Group	primate - *Rhesus macaque*	9	pre-project health screening, CSF/blood collection, pre-op imaging (CT/MRI), + chair-training, survival surgery (2-Sx), external implant cooling, intra-op ephys/stimulation, post-op ephys/stimulation, post-op imaging (CT), + body tracking, terminal Sx +/- explant, perfusion
4 Special Group	primate - *Rhesus macaque*	1	pre-project health screening, CSF/blood collection, pre-op imaging (CT/MRI) pending IACUC approval, + chair-training, survival surgery (2-Sx) pending IACUC approval, intra-op ephys/stimulation, post-op ephys/stimulation, post-op imaging (CT), + body tracking, terminal Sx +/- explant, perfusion
Amendment 3/2/2020	primate - - *Rhesus macaque*	2	Fully subcutaneous neural implant (only terminal surgical procedures)
Amendment 3/2/2020	primate - - *Rhesus macaque*	2	Tethered Liquid Perfluorocarbon Coated Needles

14. Procedure Details
a) Describe the use of animals in your project.

Experimental Timeline for Animals undergoing the following sets of procedures:

A. Overview

B. Health screening

C. Behavioral screening

D. Biofluid collection

E. Medical imaging

F. Operant behavioral conditioning

G. Box chair training and restraint

H. Food scheduling

I. Brainlab system

J. Neural device implantation

K. External implant cooling

L. Device testing and behavioral training

La. Electrophysiology recordings

Lb. Behavioral training

Lc. Body tracking

M. Device implant repair

N. Terminal device explant

O. End of study

P. Frequency list for sample collection

Q. Standard Operating Procedures

A. Overview: Assigned project animals in this study will undergo a set of procedures to allow neural device implantation for the purposes of safety testing, behavioral task performance data collection, and/or histology. Briefly, surgery will consist of implanting ultrafine electrodes into the cortex of project animals to enable electrophysiology recordings and/or electrical stimulation. The overarching goal will be to behaviorally program implanted animals and test task performance outputs in preconditioned monkeys. Potentially all monkeys on study will have implanted devices where Group 1 animals will not be allowed to surgically recover (terminal procedure) and animals falling into Groups 2, 3 and 4 will be allowed to surgically recover (survival procedures). Group 2 animals will be prioritized for testing device safety in survival procedures up to 6 months post-surgery. Animals falling into either Groups 2 or 3 will be largely dependent willingness to perform a battery of behavioral performance tasks (e.g. sensory, motor, cognitive). Group 4 is a group for an individual subject with special considerations.

B. Health screening: Routine clinical exams may be scheduled prior to surgical procedures and while on the project at various time points as necessary in consultation with the veterinary staff.

C. Behavioral screening: Monkeys may also undergo behavioral screenings prior to inclusion in the study and/or to help determine which animal group they would join. Animals would be screened for behavioral adeptness using direct visual observation of engagement level to novel items and personnel. Novel items may include simple games presented on a tablet computer, a CNPRC-approved challenging forage device, and CNPRC-approved novel food items. Animal reactions to novel personnel hand-feeding the subject or conspecifics, as well as neighbor/partner interactions would also be considered.

These project screenings, including hand-feeding, would be performed by trained lab personnel, wearing CNPRC-approved PPE including tyvek sleeves, arm protectors, and single or double gloves. Hand-feeding would be accomplished by placing food (e.g. pieces of fruit) on the animal's feeder board on front of the home

cage. Approaches made by the subject toward the feeder board in the presence of novel personnel will be counted as positive engagements.

D. Biofluid collection: We may collect blood (SOP GG-05) and/or CSF (SOP II-40) at various time-points throughout the protocol per animal. Collections can occur at health screenings (Section 14B, above), at baseline measurements made immediately prior to major surgical procedures, repeatedly during the project time course and immediately prior to perfusion/euthanasia, as necessary. Blood and CSF collection volumes associated with this study will be in accordance to CNPRC SOPs GG-05 and II-40, respectively. Collections would be spaced approximately a month apart to allow for adequate bodily replacement. In the event that a CSF/blood collection attempt does not yield an adequate sample (ie: no sample, inadequate volume or blood contamination), the CSF/blood collection may be repeated up to one additional time within a seven (7) day period.

E. Medical imaging: CT and MRI imaging may be performed. Imaging will be accomplished (following CNPRC SOP II-31) on two different dates at the CNPRC CT facility and the MRI facility at CNS. A minimum of three (3) days between scans will be scheduled. CT imaging may be performed to obtain detailed skull anatomy either preoperatively or postoperatively. The imaging time for CT scans will be brief, less than 30 min. Injectable anesthetics may be used, and a contrast agent (Isovue) may be given before or during the session. No stereotaxic frame will be used.

MR imaging may be performed preoperatively to obtain precise targeting of cortical and/or subcortical structures for later functional studies. The imaging time for MR scans will be approximately two (2) hours. Inhalant anesthesia will be used. The animal may be placed in an MR compatible stereotaxic frame in order to map MR images to stereotaxic atlases.

For each animal, we may conduct a) one MR and/or CT imaging session pre-operatively, b) one CT imaging session coordinated soon after implantation (typically within one day) if there is suspicion of brain hemorrhage, and c) repeated post-implant CT scans with at least a four-month interval between sessions. For any of these, if there are problems with the images obtained, we may rescan the animal. If an animal becomes clinical in the post-operative period following implantation, imaging requests will be made in consultation with vet staff to address sedation concerns. Otherwise, there would be a minimum of three (3) days between anesthetic procedures.

F. Operant behavioral conditioning: Operant conditioning and acclimation to trainers, daily schedule, and space will be provided via positive reinforcement. For example, during early training, calm interactions between animal and staff will be reinforced with approved rewards (treats, social entertainment, etc.). To allow animals to predict the day's events, we may condition them to pictures (icons) of anticipated events, presented as printed images or digital images on a computer screen. More specifically, icons of significant daily activity would be presented to an animal prior to that event (e.g. presenting a picture of "cage cleaning" prior to cage cleaning). Examples of daily events include: cage cleaning, enrichment, pairing, separating the pair, and exam. Over time, presentation of the daily visual schedule will help to reduce anxiety related behavior.

Because individual animals value diverse rewards differently, we may conduct preference assessments to determine the most motivating reinforcers for an individual animal. For example, reinforcers may be determined with choice trials, where animals are given a selection of rewards or images of rewards. These trials may be performed manually (e.g. physical reward or picture cards) or with a touch-screen interface. Establishment of low valve reinforcers for small tasks and high value reinforcers for more challenging tasks would be identified through the choice trial process. While conducting these trails, animals will be pair housed when possible.

G. Box chair training and restraint: Until we have developed sufficiently high-bandwidth wireless electronics, data collection from the neural interface in awake animals will be performed with the animal in a box chair (Section 9, Justification for Prolonged Restraint). Therefore, we may also conduct some of the behavioral training and testing just described with animals in the box chair, as it allows us to begin developing BMI algorithms. Moreover, it is possible to inspect and clean the percutaneous portions of our neural implant devices in chaired animals, reducing the need for sedation. Therefore, we may chair train animals in the safety-testing animals (Group 2) as well as behavioral task trained animals (Groups 3 and 4). Chaired sessions will be limited to five (5) hours, after which animals will be returned to their home cages. Chairing

may be performed every day, including weekends, but would typically be performed on weekdays only. Weekend chairing, if performed, would be done in coordination with CNPRC core staff.

H. Food scheduling: Eliciting a sufficient duration of behavior to train animals on complex tasks and to acquire meaningful data requires strong motivation on part of the monkey. As described in the operant behavioral conditioning section (14F), this may be accomplished by varying the rewards used. We expect that food rewards will be among those most highly valued by the animals. Therefore, we will work with CNPRC staff to schedule the delivery of food during the day in order to increase the value of these rewards while still ensuring that animals maintain their daily caloric levels.

During training & testing sessions, animals will be offered food rewards as described in section 7 of this protocol. The caloric composition of the food rewards consumed throughout the day will be totaled. Once animals are finished with training for the day, they will be offered sufficient food to make up any deficit in their daily caloric needs as determined by MER in conjunction with the CNPRC veterinary staff. This additional food will be provided at least 2 hours before lights off to allow adequate time for consumption.

Animals will be allowed to work for 20% over the minimum daily calorie recommendations, unless veterinary staff determine that continuing this level of caloric intake poses a health risk for an animal.

I. Brainlab system: We may use the FDA-approved Brainlab system for stereotactic navigation during our surgeries (Fig 4). This system allows for the correlation of an animal's cranial features with a computational 3D model of the head built from pre-surgical MRI, allowing us to more accurately target surgical sites.

When used, the surgery remains largely the same. The main difference is the presence of the Brainlab system in the operating room. Prior to the surgery, the MRI is loaded into the system. The animal is prepared for surgery as before. Registration with cranial features is performed after the animal is placed into a stereotaxic frame but prior to sterile draping. A clamp with infrared-reflective spheres is rigidly attached to the frame holding the animal's head. The system scans the animal's facial features and correlates them in space with the IR-reflective spheres. The site is then sterilely draped and sterile instruments with sterilel-packaged IR reflective balls are used to point at a target location on the animal's skull, which is displays that point on the animal's MRI on a computer screen.

J. Neural device implantation: On the day of surgery, animals are prepared for surgery in accordance to CNPRC SOPs II-01 and II-02. Additionally, a multimodal (Buprenorphine, Valium, Fentanyl, and/or Meloxicam) anesthetic regimen may be given to help maintain areflexia at lower doses of inhalant anesthesia. The option to place an arterial catheter for blood gas and direct blood pressure monitoring and/or urinary catheter placement may be permitted during surgery. For assigned male subject animals requiring opposite-sex pair housing, vasectomies surgeries may be performed by CNPRC Veterinary staff following SOP II-48.

Animals will be placed into the stereotaxic frame according to SOP PP-05. During the surgery, the animal's head may be further immobilized with Mayfield clamps or similar device. Prior to surgery, animals may be tattooed (SOP II-31) with ink dots at the caudal aspect of the base of the skull to later serve as landmarks for planned external cranial device (port) connectors. Alternatively, we may use a Brainlab system for stereotaxic navigation during surgery (described in Section 14I).

Under sterile conditions, an incision (up to 10 cm) will be made along midline over the sagittal crest of the scalp. The overlying scalp connective tissue and muscle will be reflected to provide access to a large region of the dorsal and lateral skull. Implants may be custom designed for an individual animal. Even when customized, however, the fit may not be perfect. Therefore, sculpting of the outer table and diploic spaces of the skull (bone thinning) will allow space to later anchor the neural device via bone screws and be able to comfortably close the surgical wound skin margins. Special care will be taken by the surgeon to not excessively thin the frontal and parietal bones. Moreover, whenever possible, bone screws will not be positioned over bone that has been thinned. Then, up to four (4) targeted craniotomies will be made overlaying the frontal or parietal lobes, with each craniotomy measuring up to 25 mm in diameter. The exposed dura mater may then be resected or resected in stages as the electrode insertion process progresses. The electrode insertion will be achieved using a novel robotic device which can individually implant very fine and flexible electrode filaments with biocompatible coating (electrode filament cross section is ~12x5 microns). The inserted electrodes are fabricated in arrays of 32-64 filaments, with each array consisting of 1-32 electrode sites. Each filament is inserted independently by a very fine and stiff needle (cross-sectional radius of <50 microns, typically 25 microns), allowing for minimal cortical tissue damage. The

electrode implantation sites occur through craniotomies and are collectively determined from pre-surgical imaging (CT, MRI), intraoperative optical imaging and stereotactic coordination.

The implanted electrodes are then inserted by the robotic device. Insertion may take place in two steps. First, a small (< 80 um diam.) hole may be made in the pia-arachnoid complex (PAC) using a mechanical or electrosurgical microdissection tool, or an ultraviolet, nanosecond laser. The electrodes are then inserted with the insertion needle, which is then withdrawn. These steps are performed by the robotic device, with continuous monitoring by the surgeon. Multiple arrays of filaments may be implanted in a craniotomy, for as many as 1000 individual filament insertions per craniotomy (4000 total).

The electrode arrays exiting from the craniotomies will be routed to a housing assembly or "pill box"—up to one per craniotomy—and secured in place with up to 20 blunt-tipped screws with a diameter measuring 1.5-4.0 mm (Fig. 1). The pill box may be connected to a small percutaneous connector (14 mm in diameter) via tunneling cables and secured in place with up to 8 blunt-tipped bone screws with a diameter measuring 1.5-4.0 mm. Depending on the length of the cable between box and percutaneous connector, we may create a shallow channel in the cranium for routing the cable.

The pillbox portion of the neural device is made of titanium alloy and is designed to be devoid of sharp edges, with pre-bent tabs for anchoring bone screws. Any event leading to the creation of a sharp edge will be discussed and inspected by CNPRC vet staff prior to device implantation and animal skin closure. Sharp edges will be addressed using an approved method of device smoothing such as a hand filing tool or another method that does not cause the ignition of metals in the presence of isoflurane and oxygen.

The current iteration of the pill box is sealed with a conformal coating of Parylene, a biocompatible moisture barrier that is commonly used as a protective coating for medical devices. We are pursuing additional refinements for sealing the pill box, including laser welding.

At the time of closing, the craniotomies may be filled with Gelfoam, bone acrylic and/or with a titanium or stainless-steel panel ("cap", Figs. 1). The caps have been refined to reduce dead-space and thus nidus for infection. Antibiotic powder (e.g. vancomycin), and/or an FDA-approved absorbable antibiotic mesh (e.g. Tyrx) may be placed over and adjacent to the device as additional anti-infection measures. Tyrx contains the antibiotic agents minocycline and rifampin and is fully absorbed into the body over a period of about two months. Closure will be performed in two layers. The fascia will be closed in one layer and local anesthetic will be dribbled over the fascia prior to skin closure. Following implantation, the animal will be allowed a 7 day post-operative recovery period unless the animal has to be sedated clinically by vet staff.

A biopatch—a protective disk embedded with Chlorhexidine Gluconate (CHG)—may be fitted deep and flush to the connector port flange to help manage long-term surgical wound margins in chronically implanted animals (animal groups 2-4; Fig. 3). The biopatch will changed at least once weekly, typically at scheduled sedated electrophysiology sessions and/or when the animal is chaired.

Animals will be provided post-operative analgesia in accordance to CNPRC SOP II-05. Should any animal experience adverse effects post-surgery (cerebral infection, cranial incision complications, or neurologic deficits, etc.), they will be evaluated and treated as appropriate by the on duty CNPRC clinical veterinarian.

The described neural device implantation surgical procedure may be performed in as many as two survival surgeries per animal for animal Groups 2, 3 and 4. Terminal animals in Group 1 will be allowed to undergo the full described neural device implantation surgical procedure but will not be permitted to recover from anesthesia. The duration of each of these surgical anesthetic events will typically be in the range of 4-10 hours with minimum seven (7) day separation period in between implantation procedures. Details for conducting intraoperative electrophysiology recordings and/or stimulation are described in the Electrophysiology section (Section 14La) of this protocol.

K. External implant cooling: We may cool our implanted neural implants with external cooling devices. Previously, we simultaneously enabled a small subset of all the channels on our implanted neural interfaces. This was because modeling and cadaver experiments showed that turning-on the full bandwidth of the neural implant device would produce more heat than the skin, fascia and bone of the head could safely dissipate. While future versions of our devices will consume less power, in the near-term, turning-on the full complement of channels on our devices would require active cooling. Modeling results suggest that liquid cooling of the skin above the neural implant would be sufficient. We propose to achieve this with recirculating-water cooling

of the skin over the implant—first with a terminal subject (Group 1) and, after the approach is validated, with the survival groups (2 and 3).

We will use FDA approved recirculating-water cooling therapy systems (e.g., Ossur Cool Rush or CSZ Electri-Cool II) with cooling pads (e.g., CSZ Cold Therapy Pads) to provide localized heat removal to the skin over the implanted neural device (Fig 7, 8). These devices allow cooling at different temperature ranges; we will not use a setting that cools the pad below 5° Celsius. We will first test this approach with a terminal subject: we will implant live electronics or resistors to simulate the thermal load of live electronics. Thermocouples and temperature sensors (Fig. 5, 6) may be affixed to different locations on the implant and animal to validate the efficacy of the cooling approach. If successful, we will proceed by acclimating survival group subjects, either before or after survival surgery, to the cooling pads while they are chaired: first while the pads contain room-temperature water and, gradually, to chilled water for longer durations. Only after the subjects are fully acclimated to the cooling systems will we attempt enabling large numbers of channels on the implanted neural interfaces.

Animals under anesthesia are hypothermic compared to awake animals; however the thermal properties of bone, fascia, skin and other tissues are unchanged by anesthesia. Moreover, blood perfusion is reduced with anesthesia, but still higher in an anesthetized animal than a cadaver. The major thermal conduction difference between an in vivo and a cadaver study of cooling is expected to be unchanged by anesthesia. Therefore, the relative change in local temperature due to the implant being turned on and the relative decrease in temperature due to external cooling would translate to the awake animal. External cooling of the implant will be first measured in a cadaver procedure.

L. Device testing and behavioral training

La. Electrophysiology recordings: During neural device implantation (Groups 1-4), intraoperative electrophysiology recordings may be conducted either before or after skin closure. Intraoperative electrophysiology recording will add up to an additional 2 hours of anesthesia to surgical time.

Postoperative electrophysiology recordings (Groups 2-4) will occur as needed under sedation or in awake chair trained animals. Sedated sessions can be appended to the end of a survival surgery (with a switch from isoflurane to another sedative for electrophysiology) or can be independent procedures. For electrophysiology recordings occurring under sedation, anesthesia may consist of propofol, fentanyl, and/or ketamine CRI. Vet staff will be consulted on the desired anesthetic plan for sedated recordings and animals may be intubated and supported at veterinary discretion. Sedated recordings will be no more than two (2) hours long and may be conducted once a week (once every 7 days) accompanied by a 7-day resting period. For electrophysiology recordings occurring in awake animals, animals will be placed in the box chair with their head restrained. Awake recording sessions will be limited to five (5) hours. At both sedated and awake recording sessions, we will perform implant inspection and (if needed) margin cleaning (per SOP II-33) before or after these procedures.

The recording sessions will consist of the connector cap being removed and digital cables linking the implanted device to an external system. Three types of electrical recordings and/or electrical stimulation may ensue in no particular order: 1) baseline recordings with no other manipulations, 2) sensory-evoked signals consisting of auditory, visual tactile or proprioceptive cues, 3) electrical microstimulation consisting of passing a small amount of current (<200 microamps) through existing electrodes in order to activate a small population of nearby neurons. Because microstimulation carries some additional risk (see: Section 15), it will be limited to no more than two (2) hours of any recording session. When recordings are complete, the system is disconnected and the cap is replaced, after which animals will be returned to their home cages.

At both sedated and awake recording sessions, we will perform implant inspection and (if needed) implant cleaning (per SOP II-33) before or after these procedures. Briefly, the percutaneous connectors and skin margin will be gently wiped with chlorhexidine-soaked swabs. Cleaning will occur at a minimum once per week, and we will clean the implant more frequently (e.g., three times per week), as necessary. Animals in groups 3 and 4 will be chair trained, so daily implant inspection and cleaning will be possible, without sedation. Animals in group 2 may be chair trained, in which case we will clean the implant while they are awake and chaired. Group 2 animals may also receive implants which do not have percutaneous connectors and so, in that case, will not need cleaning.

Lb. Behavioral training: Chaired and in-cage behavioral training and experiments will be conducted to map neural activity to behavioral outputs and to develop and test BMI algorithms (Groups 3 and 4). A behavioral

apparatus will be presented to the chaired monkey, or mounted to the cage, in such a way that the breakable or dangerous components (e.g., power cords) are fully sealed and not accessible to the animals. The apparatus may consist of any combination of a joystick, a touch-screen monitor, a (non-touch) computer monitor, a camera-based position and/or eye tracking system, and a reward delivery system, all of which may be connected to computers for automated control. After a neural interface device is implanted, these sessions would also be used to collect implant-performance data. Behavioral training sessions are expected to last no more than five (5) hours.

We may train on a wide variety of sensorimotor and cognitive tasks using positive reinforcement. Typical simple sensorimotor tasks include the animal reaching to specific locations with their hand as a function of sensory cues. Cues may be any combination of visual (e.g., spot of light, patch of moving dots), tactile (e.g., slight vibration on limb to denote "go" cue or movement target), proprioceptive (felt body position, e.g., reaching to the other hand), or auditory (e.g., a tone as a "go" cue) stimuli. We may also train some animals on this study to the "delayed match to sample" task which is a short-term memory exercise consisting of an animal remembering a previously shown/trained cue accompanied by a reward. We may also train animals on more open-ended and complex tasks. For example, animals may be trained to navigate through a virtual world using a touch-screen, joystick or hand movements, and learning to interact with virtual objects in that world for rewards. Another example may be simple video games suitable for human children.

After implantation of the neural interface devices, animals may be trained to perform these same tasks (or new tasks) using BMI control instead of the physical interfaces described above. During BMI control, the animal will effect task performance via patterns of neural activity that we record—for this reason it can only be accomplished after implantation, although animals may be familiarized with similar behavioral tasks prior to implatation. The mapping of neural activity during task performance will be recorded to develop algorithms that functionally correlate with behavioral data. Electrical microstimulation may be provided on the implanted electrodes to provide feedback (e.g. proprioceptive or tactile feedback) about task performance.

During these behavioral training and experiments, animals will be reinforced for correct behavior with a food reward (a slurry of blended monkey biscuits, fruit and water, and/or various treats), or other reinforcing stimuli (e.g., videos, images of other monkeys). For trials that are performed incorrectly, the reward will be withheld. If an animal adopts a strategy of working with low success rates, access to the task will be withheld for a short period of time ("timeout") following incorrect trials. Animals may also be given access to a "home menu" where they are trained to be able to select between behavioral tasks and/or reward options. The behavioral apparatus may be located in one or more dedicated areas of the home enclosure, with the potential to regulate access to that area, e.g. to only make it available during certain scheduled periods of the day. The dedicated areas may also only permit one animal access at a time during scheduled training or experimental sessions, with the pairing animal typically being separated.

Animals will undergo sensorimotor and cognitive testing for a maximum of five (5) hours over the course of a single day, either chaired or in their home cage. In either case, the animal will be continuously monitored by either a behaviorist in the room with the animal or via a live video feed.

Outside of these scheduled sessions, apparatuses will typically remain available for use and partners may remained paired during this period. Initial direct and indirect observations of these periods will take place at a minimum of once a week by lab staff to ensure safety of lower ranking animals during their use of behavioral devices, while in the presence of a higher-ranking partner. If our findings identify a hierarchal conflict with access to resources, individual entry keys may be evaluated and implemented, e.g., microchips for RFID access may be placed on the collar or subcutaneously, under sedation per SOP FF-05.

Lc. Body Tracking: In addition to collecting data from sensorimotor and cognitive tasks, we aim to study more naturalistic movements when developing our behavioral algorithms. Naturalistic movements will be considered self-motivated or in response to standard interactions with handlers (e.g., having the animal reach for a treat). To track these movements, we will use a camera-based position tracker system (set of cameras are used to image visible landmarks on the animals). Tracking may be performed while the animal is seated in a chair or unrestrained inside a cage. No cameras or devices will be placed inside the cage or physically on the animal. To facilitate landmark imaging, we may shave parts of the animal's limbs, tattoo the animals, or use non-toxic dyes approved at the discretion of the veterinarians. The system may require hair shaving to be able to track individual joints. Therefore, we may shave all or part of the limbs, up to a location just proximal to the elbow or knee, and small patches elsewhere on the body. Also, we may apply a non-toxic dye to aid in tracking specific anatomical locations. Approval of the non-toxic dye will be at the discretion of veterinarians, who will provide guidance based on their experience. If hair shaving and tattoos are used, they will be performed by CNPRC staff under sedation according to FF-01 or at an already scheduled sedation. Body

tracking sessions applies to Groups 2, 3, and 4 of this protocol and would typically last 30-90 minutes per session, and never more than five (5) hours.

M. Device implant repair: If an implant is damaged or if it fails, it may be repaired. All such repairs will be planned and performed in consultation with veterinary staff. It is possible that an individual component of the neural implant may fail, such as a single screw becoming loose. We do not expect this to happen, but it if it does, the implant can be repaired in place. We do not expect the need to perform more than one or two repair procedures per animal. If the repair is simple and does not require placing the animal into a stereotaxic frame, and the approach is minimally invasive, the repair can be done with injectable sedation. If the repair requires a more invasive approach, e.g. debriding tissue, or if it requires the use of the stereotaxic frame for mechanical stability, then isoflurane anesthesia will be used and supportive monitoring and analgesic procedures for major surgery will be used.

N. Terminal device explant: The ability to safely remove our neural device will be an important factor as we move toward FDA approval for use in humans. For animal groups 2-4 we may explant the neural device and inserted electrodes in a terminal procedure to gain information about how readily removable the device is for animals and thus humans. This will be done prior to termination for two reasons. First, the mechanical properties of the tissue change rapidly post-mortem, Second, we wish to assess whether electrode removal causes micro-hemorrhages, which requires normal blood volume and pressure. Assessing removability will inform metrics of success whether the electrode threads are removed intact or whether any of the thread material remains in the brain. Gross observations and histological post-mortem analysis will provide insight to any electrode retention and the degree of brain trauma associated with electrode removal.

We are currently piloting the terminal device explant using a rodent animal model. Although many aspects of the neural implant customized for rodents are necessarily different from the NHP version (e.g. size, skin closure, etc.), we are using those studies to refine the approach that will be used here. All information gained from those pilot studies and the terminal explants will inform future amendment requests to explant devices in survival subjects.

Animals will be prepared for surgery in accordance to CNPRC SOPs II-01 and II-02. The animal will be placed into the stereotaxic frame according to SOP PP-05. Under sterile conditions, a single incision (~10 cm) will be made along midline around the existing external port(s). The overlying scalp connective tissue and muscle will be reflected to provide access to a large region of the dorsal and lateral skull. The thread-cover will be removed from the pillbox portion of the neural devices and the pill boxes themselves may be removed. Then the electrode threads will be removed from the tissue through the craniotomy. Surgeon observations will be made in the surgery report about any noted signs of hemorrhage, granulation tissue and/or brain parenchyma removed at the time of electrode removal. We expect some granulation tissue to be removed. Note that brain parenchyma is not expected to be removed, as the cross-sectional area of the threads is very small (approximately 150 um^2). The expected surgery time for device explant is 60-120 minutes. Following assessment of electrode removability, the overlaying soft tissue and skin will be closed and the animal will be translocated to Pathology under general anesthesia for euthanasia and perfusion.

O. End of study: The timeline of this protocol is open-ended (for study groups 3 and 4) as the goal of the study is to develop a neural implant device for human applications. Given this long-term goal, the testing of device functionality and behavioral outputs in chronically implanted animals may not be realized for all assigned project animals. Vet staff will be consulted following any adverse effects or unanticipated recovery outcomes that arise during the course of the study. Following a determination that an animal not healthy enough to remain on protocol (animal welfare guidelines) or euthanasia is elected by Neuralink, animals may be perfused (SOPs LL-14) to preserve the brain tissue for histological analysis. Animals may undergo electrophysiology and/or CSF and/or blood collection under sedation according on SOP II-40 and GG-05 prior to an overdose delivery of pentobarbital.

P. Frequency list for sample collection: To minimize the frequency of sedation, we will schedule procedures that require sedation to occur together, whenever possible. For example, blood collection, sedated implant cleaning and sedated ephys recordings could be scheduled to occur together and benefit from the same sedation event. Consequently, animals will be scheduled for sedation at most once per week, except when deemed medically necessary by CNPRC vet staff.

Moreover, some procedures which previously required sedation (e.g., ephys recordings, implant cleaning) will be performed with awake, chaired animals whenever possible, further minimizing the need for sedation.

Below we enumerate the duration and frequency for sedation events for procedures:

Health screening: Maximum Frequency—Once at the start of the study, semiannually thereafter. Maximum duration—two hours.

Biofluid collection: Maximum Frequency—At the start of the study and monthly thereafter (repeated after seven days if there is an insufficient sample). Maximum Duration—two hours.

Medical imaging: Maximum Frequency—At the start of the study and semiannually thereafter. Maximum Duration—two hours (injectable sedatives may be used for CT imaging; inhalant anesthesia will be used for MRI scans).

Sedated electrophysiology: Maximum Frequency—weekly. Maximum Duration—two hours.

Sedated implant cleaning: Maximum Frequency—weekly. Maximum Duration—thirty minutes.

Q. Standard Operating Procedures: The following is a list of CNPRC SOPs referenced in this protocol.

CNPRC SOPs

SOP FF-01 Use of Ketamine & Telazol for Immobilization

SOP FF-05 Pole, Collar & Chair Training

SOP GG-05 Blood and Bone Marrow Collection Guidelines

SOP II-01 Surgery Preparation

SOP II-02 Inhalant Anesthesia for Experimental Procedures

SOP II-05 Post Procedure Analgesia

SOP II-33 Maintenance of Chronic Cranial Implants

SOP II-31 CNPRC Imaging Procedures at Offsite Facilities

SOP II-37 Cystocentesis

SOP II-40 Cerebral Spinal Fluid (CSF) Tap

SOP II-41 Preproject or Preshipment Physical Examination

SOP II-48 Vasectomy

SOP LL-02 Necropsy Procedures

SOP LL-08 Euthanasia

SOP LL-14 Modified Immunohistochemistry Perfusion for Nonhuman Primates

SOP PP-05 Stereotax Placement Procedure

Approved Amendments	
Date Approved	**Purpose**

08-04-2020	Staff Roster Deletion [redacted]
08-04-2020	Staff Roster Deletion [redacted]
06-08-2020	Animal Transfer Facility Change
05-28-2020	Staff Roster Deletion [redacted]
05-28-2020	Staff Roster Deletion [redacted]
05-28-2020	Staff Roster Deletion [redacted]
05-01-2020	Longer screws for temporary implant fixation
04-15-2020	Temporary Affiliate (non-UCD) Personnel Addition
04-01-2020	Staff Roster Deletion [redacted]
03-23-2020	Staff Roster Deletion [redacted]
03-05-2020	Temporary Affiliate (non-UCD) Personnel Addition
03-02-2020	Fully subcutaneous neural implant (only terminal surgical procedures)
03-02-2020	Tethered Liquid Perfluorocarbon Coated Needles
02-20-2020	Addition of non-UCD Affiliates to the Protocol
01-21-2020	Staff Roster Deletion [redacted]
01-21-2020	Staff Roster Deletion [redacted]
12-18-2019	Electromagnetic Marker Body Tracking
12-05-2019	Additional sealant materials
12-03-2019	Burr holes for surgical irrigation and suction
12-03-2019	Reflective markers for optical body tracking
11-18-2019	Addition of surgeon to roster
11-12-2019	Transfer of animals off site from CNPRC
11-08-2019	Staff Roster Deletion [redacted]
10-31-2019	Macaque Chair Armrest
10-28-2019	Addition of Surgeons
10-23-2019	Temporary Affiliate Personnel Addition
10-17-2019	Neural Implant Refinements - N1 Device and Rev 8 Surgical Robot
10-17-2019	Adverse Effect Amendment: Inadvertent Use of Drugs
10-15-2019	Implant Surface Treatment
09-24-2019	Staff Roster Addition [redacted]
09-19-2019	Request to use dental acrylic in surgery for fastening implants
09-18-2019	Addition of drugs to the drug table
09-05-2019	Staff Roster Deletion [redacted]
09-05-2019	Staff Roster Deletion [redacted]
08-22-2019	Temporary Affiliate (non-UCD) Personnel Addition
07-31-2019	Staff Roster Deletion [redacted]
07-15-2019	Staff Roster Deletion [redacted]
07-15-2019	Staff Roster Deletion [redacted]
07-15-2019	Staff Roster Addition [redacted]
07-15-2019	Staff Roster Addition [redacted]
07-15-2019	Staff Roster Deletion [redacted]
07-15-2019	Staff Roster Deletion [redacted]

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b) All Drugs and Compounds to be Administered to the Animals (except for euthanasia) - anesthetics, analgesics, neuromuscular blocking agents, antibiotics and/or experimental compounds:

Will drugs be used in this study? **Yes**

Species	Drug	Dose	Route	When and how often will it be given?
primate	Levetiracetam	10-50 mg/kg	Oral	BID x 5d (min) prophylactically to control seizures, start one day prior to Sx and up to 7 days post op
primate	Glycopyrrolate	0.004-0.008mg/kg	Intravenous (IV)	PRN for anesthetic procedures
primate	Midazolam	0.01-0.1 mg/kg	Intramuscular (IM)	PNR for immobilization
primate	Midazolam	0.01-0.1 mg/kg	Intravenous (IV)	PRN for immobilization
primate	Exparel	< or = 0.4 mg/kg	Intradermal	intraincisonal application
primate	Hydromorphone	0.05-0.2 mg/kg	Intramuscular (IM)	TID for analgesia
primate	bacitracin	50U/L of saline	Topical	Following survival and terminal procedures- amendment 10/17/19
primate	DuraSeal	N/A	Topical	sealant- amendment 12/5/19
primate	Surgiflo	N/A	Topical	sealant- amendment 12/5/19
primate	Dexmedetomadine	Up to 0.075mg/kg	Intramuscular (IM)	Adjunct to Ketamine for more complete sedation
primate	Valproic Acid	2-20 mg/kg	Intravenous (IV)	CRI, As needed for electrophysiological testing during surgery
primate	Fibrin sealant	N/A	Topical	as needed to seal dura, bone, or other tissue post-implantation
primate	Meloxicam	0.1-0.3 mg/kg	Subcutaneous (SC)	MRI in stereotaxic frame: One dose during procedures and PRN thereafter
primate	minocycline	5.1/7.6 mg	Topical	Amendment 9/18/19
primate	rifampin	8.0/11.9	Topical	Amendment 9/18/19
primate	Vancomycin powder (reconstituted as paste)	Topical	Topical	General topical use around surgical site.
primate	Remifentanyl	0.5-1 mcg/kg/min	Intravenous (IV)	To be used in combination with either Isoflurane, Ketamine, or Propofol for animal procedures and surgery
primate	Sufentanyl	8-30 mg/kg	Intravenous (IV)	To be used in combination with either Isoflurane, Ketamine, or Propofol for animal procedures and surgery
primate	Ketamine	up to 30 mg/kg	Intramuscular (IM)	Immobilization
primate	Ketamine	up to 30mg/kg	Intravenous (IV)	Immobilization
primate	Ketamine	0.25-1.5mg/kg/min	Intravenous (IV)	CRI, for electrophysiological testing during surgery
primate	Glycopyrrolate	0.004-0.008mg/kg	Intramuscular (IM)	PRN for anesthetic procedures
primate	Propofol	2 ml/kg to effect	Intravenous (IV)	CRI, alternate/adjunct anesthetic for surgery

primate	Isovue	2-2.5ml/kg	Intravenous (IV)	Contrast agent for CT scans
primate	Isoflurane	to effect	Inhalation	continuous during procedures that require inhalant anesthesia
primate	Atipamezole	dose eq. to Dexme	Intramuscular (IM)	Dose equiv. to dexmed
primate	Cefazolin	25 mg/kg	Intramuscular (IM)	Post-op or PRN to reduce risk of intra- or postoperative infection
primate	Mannitol	1.6-2.2 mg/kg	Intravenous (IV)	During surgery as needed
primate	Dexamethasone	0.5-2 mg/kg	Intravenous (IV)	one dose may be administered perioperatively and additional doses may be given as needed to reduce the potential for cerebral edema
primate	Ketoprofen	2-5 mg/kg	Intramuscular (IM)	as needed for analgesia and/or antiinfammatory effects
primate	Telazol	5-8 mg/kg	Intramuscular (IM)	Immobilization
primate	Valium	0.5-7.5 mg/kg	Intravenous (IV)	As needed during surgery
primate	Fentanyl	7-10 mcg/kg/hr	Intravenous (IV)	CRI, alternate/adjunct anesthetic for surgery
primate	2.0% Lidocaine	0.5-3 ml	Intradermal	PRN to incision sites during surgery, as needed on skin margins
primate	Bupivicaine 0.25%	0.5-3 ml	Intradermal	PRN to incision sites during surgery, as needed on skin margins
primate	Lidocaine (Xylocaine)	Lidocaine Jelly	Topical	For use during placement of urinary catheter
primate	Atropine	0.04mg/kg	Intramuscular (IM)	PRN for anesthetic procedures
primate	Buprenorphine	0.03mg/kg	Intramuscular (IM)	Post-op or PRN
primate	Thrombin	N/A	Topical	PRN to control bleeding
primate	Biopatch (Chlorhexidine Gluconate)	<95 mg of CHG	Topical	weekly (every 7 days) changes at scheduled sedated electrophysiology recordings to manage long term surgical wound margins in chronically implanted animals
primate	Cefazolin	25 mg/kg	Intravenous (IV)	Intra-operative antimicrobial Q 2 hr
primate	Dexamethasone	0.5-2 mg/kg	Intramuscular (IM)	Post-op or PRN to reduce risk of intra- or postoperative inflammation
primate	Benadryl	2-4 mg/kg	Intramuscular (IM)	Post op or PRN to control for drug reactions
primate	Famotidine	0.5 mg/kg	Intramuscular (IM)	Adjunct to Dexamethasone to protect GI mucosa
primate	Heparin (1000iu)	1-3 mL	Intravenous (IV)	anticoagulant to be given before euthanasia and perfusion

c) Anesthesia Monitoring:

The CNPRC staff will monitor animals during anesthesia per CNPRC SOPs FF-01 and II-02.

d) Post-Anesthetic Monitoring:

The CNPRC staff will monitor animals recovering from anesthesia per CNPRC SOPs FF-01 and II-02.

e) Surgery:

i) Surgery Location(s) and Surgeon(s):

Building	Room	Surgeon(s)
[redacted]	N/A	CNPRC Primate Veterinarians, [redacted]

ii) Post-Surgical Monitoring:

a) Please identify the parameters monitored, and interval(s) and for what duration of monitoring.

The CNPRC staff will monitor post-operative animals per CNPRC SOP II-02.

To enhance care in the postoperative period, the following decision algorithm for the 48 and 72 hr postoperative mark has been designed by CNPRC veterinarians:

By 48 h, the animal will be euthanized if it has: Paralysis • Head pressing that does not improve with treatment • Emesis uncontrolled with treatment (>2x's/d on treatment) • Seizures uncontrolled with treatment • Fainting spells that do not improve with treatment

Or it is unable to: Meet the 24 h algorithm endpoints (conscious, sitting up, have PLRs, swallow, motor reflexes) • Track with its eyes • Maintain adequate respiration to sustain oxygenation (SpO2 > 90) • Respond to touch/loss of sensation (numbness) and/or deep pain sensation • Attempt to feed itself (w/ coordinated arm movement) • Sleep • Stand

By 72 h, the animal will be euthanized if it is unable to: Meet the 24 and 48 h algorithm endpoints • Urinate and defecate • Stay awake • Unimproved mentation from postop • Eat supplements on its own • Move around the cage by ambulating on all 4 limbs

b) When will analgesics be administered and at what interval(s)?

>Analgesics will first be given prior to the procedure being completed using SOP II-05, minimally 3 days, and continue until the primate medicine staff deems adequate.

c) If post-operative analgesics cannot be given, please provide scientific justification.

N/A

15. Adverse Effects:

a. Describe **all significant** adverse effects that may be encountered during the study.

Neural interface implant surgery
- Brain often swells during surgery; swelling can lead to tissue damage or increased intracranial pressure.
- Intracranial hemorrhage/stroke, evidenced by bleeding during surgery or neurologic deficits afterwards.
- Seizure due to brain irritation, swelling, or tissue damage; these are most likely to occur within 24 hours of array implantation or explantation.
- Complications arising from bone screws impacting the brain
- Complications arising from arterial line (infection, embolism) or urinary catheter placement (infection, pain, hematuria).
- Our implants are designed to be devoid of sharp edges, however the unintentional formation of sharp edges on the implant device could cause inflammation and skin erosion.

Stereotax
- During placement into the stereotaxic device, some monkeys experience perforation of the tympanic membrane.

Percutaneous connectors
- Externalized (percutaneous) connectors create a route for infection, and infection is expected in every case a percutaneous connector is used. While chronic infections are expected, with proper management these should be self-limiting and reach a steady state, as with other cranial implants used in macaques. Signs of infection include: swelling, erythema (redness), discharge, discomfort on palpation, lethargy, lack of appetite

and, in the most severe cases, head pressing and neurologic signs.
- Since it is an external dressing, there is the potential for the animal to ingest the Biopatch following recovery.
- Implant boxes or connectors could come loose from the skull, causing pain or irritation.
- Pain evidenced behaviorally (e.g., malaise, wound picking)

Restraint
- Discomfort or distress evidenced by vocalization, physical agitation, stereotypic behaviors, or poor task performance.

Neural microstimulation
- Repeated stimulation of the brain drives plastic change in brain circuitry that can lead to epileptiform activity and ultimately seizures; these typically would start during or shortly after stimulation and would likely become more frequent without intervention.

Neural implant temperature
- The effect of heat on tissue is complex and poorly understood. Temperature increases of up to 1.8° C above baseline promote angiogenesis, which may promote heat dissipation. In CNS tissues, temperature increases of 5° Celsius can break down the blood-brain barrier after 60 minutes of exposure. Neuronal cell death has been reported at temperatures as a low as 3.5° Celsius above baseline after 60 minutes.
- Cooling the brain is generally neuroprotective. The main adverse effect of decreased core body temperature is hypothermia, most of the complications of which (e.g. cardiac arrhythmias) occur when the core body temperature is reduced more than 5° Celsius below baseline.
- External cooling of the implant may lead to thermal burns and may be uncomfortable and/or irritating to the animal whether awake or recovered from anesthesia.

Vasectomy
-We do not anticipate any adverse reaction, however with anesthetic procedures the animal may experience discomfort after the procedure. The animals are given analgesics and sometime antibiotics to counteract any unavoided distress from the procedure.
-There is a chance the animal could develop sperm granulomas or vasocutaneous fistulas, depending on age and the recovery period. These conditions will be treated as per veterinary discretion.

Neural device explant surgery
-The most anticipated adverse effects of electrode removal are micro-hemorrhage or leaving small fragments of the threads in the tissue.

Transdermal implant cooling
-Application of an external cooling device to the skin may result in thermal burns and/or be irritating for the animal.

b. Describe frequency for monitoring the well-being of animals on the study and criteria for terminating/modifying the procedures(s) if adverse effects are observed.

Neural interface implant surgery - Animal will be monitored continuously during the surgery and until recovered from anesthesia, which are the periods of greatest risk for stroke or seizures due to the implantation, or embolism due to arterial line placement. - Animals will be monitored at least once a day after surgery for pain and hematuria until analgesic treatments are no longer required. - Animals exhibiting lasting neurological deficits that affect the ability to care for itself or lead to persistent pain or distress will be removed from study and euthanized. - If an animal presents skin defects (ulcerations) near the implant, we will consult with CNPRC veterinary staff on the best course of treatment. Possible treatments could include antibiotic therapy, a repair procedure or, in severe cases, the removal of the animal from the study and euthanasia.

Stereotax - Animals with ruptured tympanic membranes are treated with antibiotics and analgesics and evaluated weekly to ensure membranes are healing - In the unlikely event that ruptured membranes lead to persistent, untreatable pain or infection the animal would be removed from study and euthanized.

Percutaneous connectors
- Implants will be visualized daily by husbandry staff and evaluated at least twice a week by lab staff. Hair may be trimmed around the external hardware to reduce the risk of infection. Signs include: swelling, erythema (redness), discharge, discomfort on palpation, lethargy, lack of appetite and, in the most severe cases, head pressing and neurologic signs.
- External devices will be cleaned with disinfectants as recommended by the CNPRC veterinary staff and

according to SOP II-33. If an infection is present we will consult with the CNPRC veterinary staff on the best course of treatment.
- In the unlikely event that the connector leads to persistent, untreatable pain or infection, the animal would be removed from study and euthanized.

Restraint - Animals are monitored for distress continuously while restrained. - In the unlikely event that animals do not acclimate to the primate chair, they will be removed from study.

Neural microstimulation - Animals will be monitored, continuously during in-chair experiments and at least two times per day during in-cage experiments. - In the unlikely event that stimulation-induced epilepsy persists after stimulation protocols are changed or terminated (see below), the animals would be removed from study and euthanized.

Neural implant temperature - Neural implant temperature will be periodically monitored using touchless IR temperature probes while implants are turned-on - During testing of the cooling approach in terminal procedures, core body temperature will be monitored using standard intraoperative temperature probes. - In the unlikely event that implant heating leads to persistent, untreatable pain, the animal would be removed from the study and euthanized. - When the cooling protocol is initiated with awake animals they be monitored for shivering and other signs of hypothermia or discomfort. - If thermal burns or changes to healthy skin are observed where cooling is attempted, cooling will be discontinued and vet staff consulted for treatment.

Vasectomy -Animals will be monitored at least once a day after surgery until analgesic treatments are no longer required. -Animals will be monitored at least once a day after surgery until analgesic treatments are no longer required. Pairing will be delayed to reduce the chances of sperm granulomas, if needed.

Neural device explant surgery - Since the explants will be performed in a terminal procedure, no additional monitoring is necessary.

Transdermal implant cooling -If adverse changes to healthy skin overlying the implant are noted (discoloration, redness, swelling, etc.), the application of the cooling device to the animal's skin will be ceased. Modification of application methods to the skin other than a cooling device will be discussed with vet staff.

c. How will the signs listed above be ameliorated or alleviated?

Neural interface implant surgery - The risk of brain swelling will be reduced by preventative treatment with mannitol and/or dexamethasone. Swelling will be managed with additional doses of mannitol and/or by controlling blood CO2 levels - The risk of seizure will be reduced by preventative treatment with valproic acid. Seizures would be treated with valium. - In general, neurologic signs would be assessed by veterinary staff and treated according to their clinical recommendations - The risk of bone screws impacting the brain will be reduced by using presurgical CT imaging to assess bone-thickness select the appropriate screw lengths. - Any customization of neural devices during surgery leading to the creation of a sharp edge will be discussed and inspected by CNPRC vet staff prior to device implantation and animal skin closure. This includes the removal of titanium tabs on the pillbox portion of the neural device. Any created sharp edge will be addressed using an approved method of device smoothing such as a hand filing tool or another method that does not cause the ignition of metals in the presence of isoflurane and oxygen.

Stereotax - Animals with tympanic membrane ruptures are treated with antibiotics and analgesics. Furthermore, to minimize the incidence of ruptures, personnel placing animals in the stereotaxic apparatus receive training prior to attempting placement.

Percutaneous connectors
We will take a three-pronged approach to managing the risk of infection: i) measures taken at the time of surgery and during the post-operative phase, ii) managing steady-state superficial chronic infections that will inevitably develop at some point with percutaneous implants iii) strategy for treating episodes of more significant infection. Any signs of discomfort due to a loose implant will treated with analgesics until we are able to determine the source of the problem. If the implant can be repaired, it will be (see Sec. 14 above); otherwise the animal will be removed from study and euthanized.

i) Surgery / post-operative - We will ensure that the implanted device is sterile. We have refined our gas sterilization procedures for the "pill box": previously we were sterilizing after sealing the box with a conformal layer of paryleyne polymer (parylene is a moisture and dielectric barrier), however ethylene oxide does not

penetrate parylene. Now we are sterilizing the pill box twice: before and after parylene deposition to ensure complete penetration.
- We have also refined the thread "cap" for our neural device implant so that there is less dead-space to provide nidus for infection (Fig. 1).
- The use of antibiotic impregnated sterile flush for surgical irrigation
- Leaving antibiotic powder/paste around the implant at the level of the skull
- Implanting an absorbable antibiotic impregnated mesh
- The use of a replaceable chlorhexidine impregnated biopatch
- Periodic clipping of hair around the margin

ii) Management of superficial infections - Cleaning the implant and margins with dilute chlorhexidine or betadine soaked gauze at a frequency that maintains the skin margins looking clean, dry, and with minimal discharge.
- Initially cleaning would occur once a week escalating up to 5 times a week, as necessary.
- The application of a replaceable Biopatch to the connector to remain between cleanings. Special care will be taken to ensure there is no finger accessibility of the Biopatch by the animal or its cage mate. If an animal does ingest the Biopatch, it should cause minimal risk to the animal as CHG causes mild GI flora imbalance.
- Flushing with cefazolin impregnated flush could also be used at this stage, as necessary.

iii) Management of significant infections - This would either be when the margins are becoming heavily infected despite cleaning, or the animal is displaying signs of systemic illness
- We would culture the infected area and use this to guide pulse therapy with appropriate systemic antibiotics plus analgesics, as indicated
- Once the episode is resolved, antibiotics would be discontinued and it would return to steady state cleanings, as described above

Restraint - Upon evidence of discomfort or distress in the primate chair, we will examine the animal to ensure that restraints are comfortably adjusted. If the distress continues, the animal will be returned to its home cage. Ongoing signs of distress will be addressed, in consultation behavioral and/or veterinary staff, by reducing the duration of restraint, followed by gradual re-acclimatization. If these steps are not effective at eliminating signs of distress, the animal will be removed from study.

Neural microstimulation - If epileptiform activity or seizures are observed, stimulation protocols would be change to minimize the risk of further aberrant activity, e.g. by changing the frequency of stimulation or halting stimulation near the site of aberrant activity. If aberrant activity or seizures persist, the microstimulation protocol be suspended entirely. In this case, we would work with veterinary staff to determine if and when stimulation could be safely resumed. - Any seizures would be treated as indicated, after consultation with veterinary staff.

Neural implant temperature - We will use recording parameters and durations which have been validated in terminal experiments to produce safe (< 2° C) increases in brain tissue temperature, either alone or in conjunction with active cooling. - The cooling protocol is applied to the skin surface, not the brain directly, and is not expected to reduce core body temperature significantly. Any decrease in core body temperature will be limited to less than 2° C from baseline. - Turning off the implant immediately ceases heat generation. -If intervention of the skin where cooling was attempted is deemed necessary by vet staff, affected skin will be addressed with appropriate analgesia and supporting treatment.

Neural device explant surgery - Since the explants will be performed in a terminal procedure, no impact on animal welfare is expected. These data will inform the degree of brain tissue damage that might be expected in a survival subject and plan accordingly for future project animals.

Transdermal implant cooling -If signs of skin irritation arise from skin application of the cooling device such as inflammation (swelling, redness, etc), vet staff will be consulted for analgesia and supportive treatment. The transdermal implant cooling device would be removed if we observe shivering or other signs of hypothermia or discomfort or if their temperature decreases more than 2° C from baseline.

d. List the criteria to be used to determine when euthanasia is to be performed or the animal will be removed from the study.

Humane endpoints "Guidelines for Humane Euthanasia of Animals on Protocols at the CNPRC." If animals exhibit neurological signs, we will consult with the veterinary staff and treat as recommended. For example, we may see paralysis, paresis, or seizures. If these neurologic signs persist, are untreatable, cause

discomfort or distress in the animal, or affect the animal's ability to care for itself, then the animal will be removed from study and euthanized.

Per CNPRC policy, animals can experience a weight loss of =<25% from time of the initial surgical procedure. If animals do not rebound in weight loss following surgery and remain at 20% weight loss from the initial time of surgery, and the veterinary staff determine that the animal will not adequately respond to treatment, the animal will be removed from study and euthanized.

Animals experiencing significant untreatable pain or discomfort, or uncontrollable self-injurious behavior (as determined by veterinary staff) the animal will be removed from study and euthanized.

Scientific endpoints: Animals may continue on study as long as they remain in good health, the neural interface continues to function and/or they continue to perform behavioral tasks, and we can effectively collect data from them. However, animals may be removed from study and euthanized after significant degradation is implant performance is observed or if the animal meets all target performance metrics on the current set of BMI tasks in development.

16. Euthanasia:

Species	Method	Drug	Dose	Route	Justification for Physical Methods
primate	Overdose	Pentobarbital	> = 120 mg/kg	Intravenous (IV)	N/A

17. Disposition:

At the end of the experiment, animals will be euthanized per CNPRC SOPs #LL-14 (perfusion) or LL-08 and LL-02 (euthanasia and standard necropsy).

18. Roster:

Name	E-mail	Occupational Health Participation	ACU 101 Training	Rodent Survival Surgery Course	Qualifications/Experience
[redacted]	[redacted]	11-19-2019 *exemption*	11-09-2019	Not Found	[redacted] has a PhD in visual neuroscience from University College London in 1997 with 25 years experience of working with rhesus macaques and performing brain surgery. He is currently an Assistant Professor of [redacted] at UCSF. [redacted] has been provided the option to have a medical evaluation completed by Occupational Health and has received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-

					human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	08-21-2020 *exemption*	09-12-2019	Not Found	Dr. [redacted] is an ACLAM boarded veterinarian who specializes in the anesthesia, surgery, and medical care of large laboratory animals. Dr [redacted] has 8 years experience working with a range of NHP species as a clinical veterinarian at Columbia University and Stanford University. Dr. [redacted] activities on this project will be limited to research --- for example, assisting, advising and participating in primate neurosurgeries. All clinical care and clinical decisions will be deferred to CNPRC Veterinary Staff.
[redacted]	[redacted]@ucdavis.edu	05-07-2020 *exemption*	05-05-2020	Not Found	[redacted] M.S. Mechanical Engineering from Georgia Institute of Technology. Patrick's role at the Primate Center will be to work with the OR engineering team in the OR and may come in regular contact with NHPs. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health

					Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	03-21-2018 *exemption*	02-14-2018	Not Found	[redacted] has an Associate of Science Degree in Veterinary Technology and 12 years of experience in lab animal medicine. She has over 10 years of experience working with NHPs at UCSF, including surgery, recovery, and other aspects of animal care. They have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training

					is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	03-05-2020 *exemption*	03-04-2020	Not Found	[redacted], B.S. Biological Science. [redacted] is a Registered Lab Animal Technician (RLAT), AALAS (December 2018) and a current lab animal technician II at Standford School of medicine caring for a variety of animal species including mice, rats, fish, frogs, turtles and birds. [redacted] role at the Primate Center will be to work with the behavioral team and may come in regular contact with NHPs. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated

					with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]	02-10-2020	03-06-2019	12-10-2018	Trained DVM with 5+ years of neuroscience post doctoral research experience. Under supervision and logged training, she will continue to acquire nonhuman primate procedural experience.
[redacted]	[redacted]@ucdavis.edu	03-05-2020 *exemption*	03-03-2020	Not Found	[redacted], B.S. Electrical Engineering. [redacted] role at the Primate Center will be to perform ephys and thermal measurements in close proximity of NHPs. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized

					best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	02-11-2020 *exemption*	02-05-2020	Not Found	Veterinary Technician for 10 years in research on new surgical medical devices. [redacted] activities on this project will be limited to research --- for example, assisting, advising and participating in primate neurosurgeries and postoperative monitoring. All clinical care and clinical decisions will be deferred to CNPRC Veterinary Staff. [redacted] has been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]	11-13-2019 *exemption*	07-02-2019	Not Found	[redacted] has 6 years experience performing duties as a CNPRC Animal Husbandry Technician and her new role at the Primate Center with NRL will be to prep food,

					perform rig and equipment maintenance and cleaning, organizing lab supplies, initially train animals to perform husbandry behaviors (lixit, shift, target, trade, etc) and eventually chair and oversee game play. [redacted] been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]	10-08-2020	09-06-2018	Not Found	RVT, 15 years experience working with nonhuman primates, including extensive anesthesia and animal handling skills.
[redacted]	[redacted]@ucdavis.edu	12-12-2019 *exemption*	12-10-2018	Not Found	[redacted] is a mechanical engineer with Neuralink since May 2018. He holds a B.S. in Mechanical Engineering from Northwestern University. He holds a BS in Mechanical Engineering from Northwestern University and is working

					toward gaining nonhuman primate research experience. His role at the Primate Center will be to work with the machinery interfacing with primate subjects in the operating room. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	12-06-2017 *exemption*	10-22-2017	Not Found	Behaviorist, B.S. in Biology from UC Santa Cruz with over 10 years of experience in animal behavior, including wild captive animals.
[redacted]	[redacted]@ucdavis.edu	12-06-2017 *exemption*	09-11-2017	Not Found	B.S. in Biology, 3 years of surgical research experience on the gastrointestinal tracts of rats, rabbits, cats, and pigs in a Mechanical Engineering lab at the Georgia Institute of Technology; trained on

					stereotaxic surgery at Neuralink.
[redacted]	[redacted]@ucdavis.edu	03-21-2018 *exemption*	03-01-2018	Not Found	Dr. [redacted] is currently a neurosurgeon at CPMC in San Francisco. Most recently, he worked as a Clinical Instructor of Neurosurgery at Stanford University where he also conducted cutting-edge research in optical brain interfaces. He completed his neurosurgery residency at UC San Diego and medical school at USC Keck School of Medicine. Dr. [redacted] also has extensive neurosurgical experience with research animal models, including macaque and marmoset. They have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

[redacted]	[redacted]@ucdavis.edu	04-13-2020 *exemption*	02-12-2019	Not Found	B.S. PHYSICS, MINOR MATHEMATICS. His role at the Primate Center will be to work with the machinery interfacing with primate subjects in the operating room. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]	06-29-2020	10-11-2019	Not Found	Over 30 years of experience with surgical and neurohistological procedures in macaque monkeys. [redacted] is director of the CNPRC
[redacted]	[redacted]@ucdavis.edu	09-21-2020 *exemption*	10-05-2018	Not Found	[redacted] - BS in Bioengineering. [redacted] has experience with small animal dissections and research utilizing human subjects. TAF exemption. They have been provided the option to have a medical evaluation completed by

					Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Nonhuman primate training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	01-17-2018 *exemption*	12-31-2017	Not Found	[redacted] is a neuroengineer with experience in brain-machine interfaces & neuroprosthesis, electrical stimulation, movement, somatosensation, multisensory integration. [redacted] completed his PhD at Duke University and has over 15 years of experience working with awake, behaving macaques. They have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at

					greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	03-21-2018 *exemption*	02-20-2018	Not Found	[redacted] has over 7 years of biomedical device development; trained in-house on surgical procedures, BSE and MSE in Mechanical Engineering from University of Pennsylvania. Worked at Modlab, Willow Garage, Transcriptic, and Dispatch AI on robotics software, electronics, and hardware. They have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover

					the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	12-06-2017 *exemption*	07-02-2017	Not Found	Surgeon, Electrophysiologist, Ph.D in Electrical Engineering from UC Berkeley. Experienced in integrated circuits designs, biosenser/circuit interfaces, and next generation wireless circuits.
[redacted]	[redacted]@ucdavis.edu	12-06-2017 *exemption*	04-08-2020	Not Found	M.S. Animal Behavior and Well-Being, spent 16 years as UCSF Lead Behaviorist and Animal Facility/ Primate Husbandry Manager.
[redacted]	[redacted]@ucdavis.edu	10-23-2019 *exemption*	10-22-2019	Not Found	[redacted] will be using machines/equipment that interface with the animals during surgery. [redacted] has been provided the option to have a medical evaluation completed by Occupational Health and has received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health

					and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	10-16-2019 *exemption*	10-08-2018	Not Found	BA in Psychology. [redacted] has experience in dog training and she has worked as a animal care intern. She has been provided the option to have a medical evaluation completed by Occupational Health and has received information regarding the services provided by UC Davis Occupational Health Services. She has been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training is documented and covers the hazards associated with non-human primate research and the health and safety risk associated with this research project. She will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	06-29-2018 *exemption*	06-22-2018	Not Found	a Ph.D. in Materials Science and Engineering. Has done histology-related work on rodents (e.g., perfusions, dissections, tissue preparation, IHC staining) for the past 4 years both during his graduate studies and for the past 8

					months on sheep for Neuralink. He will be trained by senior staff.
[redacted]	[redacted]@ucdavis.edu	07-20-2018 *exemption*	07-09-2018	Not Found	Mechanical Engineer at Neuralink since June 2018. Spacecraft Mechanisms, Space Robotics Engineering Intern at US Naval Research Lab, Product Design Intern at Apple, Mechanical Engineering and Software Development Intern at Orbital ATK, Machinist and Supervisor at Cornell Emerson Machine Shop. The personnel listed in this amendment have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.
[redacted]	[redacted]@ucdavis.edu	01-17-2018 *exemption*	02-20-2018	Not Found	[redacted] has a BS in Mechanical Engineering from UC Berkeley; 6 years experience working as a mechanical engineer at Tesla and now Neuralink.

					They have been provided the option to have a medical evaluation completed by Occupational Health and have received information regarding the services provided by UC Davis Occupational Health Services. They have been advised to self-report to their personal healthcare provider any conditions that may put them at greater risk to the hazards of working with non-human primates and the hazards associated with the research protocol. Training has been documented on CNPRC responsibilities, policies, and procedures. Training is ongoing and reflects job assignments. Training are documented and cover the hazards associated with non-human primate research and the health and safety risk associated with this research project. All personnel will be trained on and expected to follow CNPRC SOPs, "Attention to Detail" training documents, and professionally recognized best practices associated with the research protocol.

Protocol #21222 - Appendix C - Non-human Primate Enrichment Program Form

Section 1. Social Enrichment

Pairing conditions from which subjects are to be exemp.

No Social Enrichment exemptions required

Section 2. Food Enrichment

Food enrichment from which subjects are to be exempt.

No Food Enrichment exemptions required.

Section 3. Cage Enrichment

Cage enrichment items from which subjects are to be exempt.

No Cage Enrichment exemptions required.

Assurances for the Humane Care and Use of Vertebrate Animals:

I have read and agree to abide by the ***UC Davis Policy and Procedure Manual section 290-30*** (Animal Care and Use). This project will be conducted in accordance with the ***ILAR Guide for the Care and Use of***

Laboratory Animals, and the **UC Davis Animal Welfare Assurance** on file with the US Public Health Service. I will abide by all Federal, State, and local laws and regulations dealing with the use of animals in research.

The activities proposed in this application do not unnecessarily duplicate previous experiments [AWA 2.31(d)(1)(iii)].

I will advise the IACUC in writing of any proposed significant changes in the procedures and wait for IACUC approval prior to implementing the change. I will also advise the IACUC of any changes in personnel involved in this project.

☑ I have read and agree with the above statements.

Animal ID# [redacted]

California National Primate Research Center

Page # 4

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/25/18					INCISION IS CDI	
MMU [redacted] 6yrs 5mos 7.06kg NRL02 F					A: Good postop recovery - bilat cranial implant w/ electrodes	
Fiber Inulin 2.00 chw/animal Dose; 2. Chew Total Dose					P: CTM closely on PO, offer supps to encourage intake (10/28) cont inulin fiber dos for a few days (10/30)	
2.00 Chew Volume; PO Rte; SID Freq; 6 Days; Start 10-25-2018					Maropitant (10/25), Dexamethasone & Levetiracetam (10/27) Famotidine (10/27) Cefazolin (10/28)	[redacted]
MMU [redacted] 6yrs 5mos 7.11kg NRL02 F						
Boost 1.00 bottle(.5L)/anim Dose; 1. Bottle(.5L) Total Dose						
1.00 Bottle(.5L) Volume; PO Rte; SID Freq; 7 Days; Start [redacted]R-2018						[redacted]
MMU [redacted] 6yrs 5mos 7.11kg NRL02 F						
Maropitant 10 mg/mL 1.00 mg/kg Dose; 7.1 mg Total Dose						
0.70 mLs Volume; SC Rte; SID Freq; 5 Days; Start 10-21-2018 End 10-25-2018						[redacted]
10/26/18		F	G	N	SO: BAR Fair amt of stool under cage. Animal is alert & active. No defecits. Eating supps well doesn't like respiratory of item eating chow. A/P see 10/25	[redacted]
10/27/18		P/F	G	N	SO: BAR, active & moving well. Incision CDI. Ate all supps & drank all boost.	[redacted]
10/28/18		G	G	N	SO: BAR, incision CDI, ate all supps, drank all boost.	[redacted]
10/29/18		P	G	N	SO: BAR, ate nuts; implant CDI; good mental (engagement); ots CDI by scabbing	[redacted]
10/30/18		F	G	N	SO: BAR Animal reading ate dates, chewnos & fig bars. Fair amt stool under cage A: Stable post op. P: Monitor daily on CP until meet home after recovery	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000129

UCD 0301

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/24/18					Animal's posture is more upright	
					today A: Cont good post op recovery	
					from bilateral cranial implant w/	
					electrodes P: Finish analgesics &	
					benadryl today. Cont Dexameth & Keppra	
					~~today~~ ① (10/27), Fenitoine (10/27), naropin	
					(10/24) ①, efazolin (10/28)	
					(consider stopping naropin cont (10/25)	
					SO: Animal was obs. scratching chest &	
					inj region @ morning health check but	
					no scratching obs after benadryl &	[redacted]
					SO3 (3 pm) Animal drank a whole	
					package of boost, eat some PC,	
					dates, dried apricots, snap peas	
					fig bars. Very little stool this pm.	
					P: Offer multi dots [illegible] see above	[redacted]
					SO: Animal noted scratching several	
					times today - opioids & benadryl	
					end 10/25	[redacted]
10/25/18		F/Low	N		SO: POAR Animal has (ar cut of	
					stool Mentation is good. Activity	
					is also good. Animal was noted	
					(or picture @ surgical site on &	
					around incision & implant repeatedly	
					AM: noted some scratching on	
					lower back even though opioids	
					ended yesterday. Reactively ate	
					lots of rice cereal this am	

① PE [redacted] 10/24/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
10/22/18					SO: Per DVM, administered preventative	
					Dexamethasone dose (0.70mL IM) for	
					bilateral cranial implant procedure.	
					A/P: see previous entry.	[redacted]
10/23/18					MMU [redacted] F 6yrs 4mos 7.06kg NRL02 Diphenhydramine 50 mg/mL 3.00 mg/kg Dose — 21 mg Total Dose 0.40 mLs Volume — IM Rte — BID Freq — 2 Days Start 10-23-2018 — End 10-24-2018 SO: Noted animal	
					scratching intermittently	
					probably due to	
					opioid admin	
					P: Bmadin x 2d	[redacted]
10/23/18		G	G	N	SO: BAR Animal is fairly bright	[redacted]
					just seemed to notice animal in	
					the next cage. Seems to be preening	
					to that animal (via the mirror)	
					Animal is eating lots of moving	
					around the cage well	
					A: Excellent post op recovery P: GIM	
					closely. Offer supps to encourage	
					intake (cont chalogesic & Metacam	
					K10/24) Dexamethasone (10/27) Keflora (10/27)	
					Cefuroxim (10/28) Famotidine (10/27)	
					Maropitant (10/27) - but consider	
					stopping soonest	[redacted]
10/24/18		F	G	N	SO: BAR Animal is bright & active	
					- no neurological signs obs. The animal did	
					not eat quite as much later yesterday	
					as fresh supps & greater variety	
					were not offered as much. Some amt	
					of stool under cage. Incision CDI	

California National Primate Research Center

Animal ID# [redacted]

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials

10/22/18

MMU [redacted] F
6yrs 4mos 7.11kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .21 mg Total Dose
0.70 mLs Volume — IM Rte, SID Freq, 3 Days
Start 10-22-2018 — End 10-24-2018
give as PM dose only

0.15 mg/kg Dose — 1.1 mg Total Dose
0.11 mLs Volume — IM Rte, TID Freq, 3 Days
Start 10-22-2018 — End 10-24-2018
check with sx tech for time of first dose

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 178 mg Total Dose
0.50 mLs Volume — IM Rte, BID Freq, 7 Days
Start 10-22-2018 — End 10-28-2018

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 7.1 mg Total Dose
0.70 mLs Volume — IM Rte, SID Freq, 1 Days
Start 10-21-2018 — End 10-21-2018
Modified
Dose Ovrd, Modified | GIVE

Dexamethasone 10 mg/mL
0.50 mg/kg Dose — 3.6 mg Total Dose
0.36 mLs Volume — IM Rte, SID Freq, 2 Days
Start 10-25-2018 — End 10-26-2018
Dose Ovrd

Maropitant 10 mg/mL
1.00 mg/kg Dose — 7.1 mg Total Dose
0.70 mLs Volume — SC Rte, SID Freq, 7 Days
Start 10-21-2018 — End 10-27-2018
Modified
10/21 DOSE GIVE IN

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 213 mg Total Dose
2.10 mLs Volume — PO Rte, BID Freq, 2 Days
Start 10-23-2018 — End 10-24-2018
Modified
Modified, Dose Ovrd

MMU [redacted] F
6yrs 4mos 7.11kg NRL02

Boost
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte, SID Freq, 4 Days
Start 10-22-2018 — End 10-25-2018
BOOST SOAKED CHOW PLEASE

Rice Cereal
Dose — Total Dose
Volume — PO Rte, SID Freq, 6 Days
Start 10-22-2018 — End 10-27-2018

1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte, SID Freq, 7 Days
Start 10-22-2018 — End 10-28-2018
(1602)

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5.3 mg Total Dose
0.50 mLs Volume — IM Rte, SID Freq, 1 Days
Start 10-22-2018 — End 10-22-2018
PLEASE have ready for SX to give

Dexamethasone 10 mg/mL
0.25 mg/kg Dose — 1.8 mg Total Dose
0.18 mLs Volume — IM Rte, SID Freq, 1 Days
Start 10-27-2018 — End 10-27-2018
Dose Ovrd

Levetiracetam 100 mg/mL
10.00 mg/kg Dose — 71 mg Total Dose
0.70 mLs Volume — PO Rte, SID Freq, 1 Days
Start 10-21-2018 — End 10-21-2018
Modified
Modified, GIVE

MMU 42904 [redacted] F
6yrs 4mos 7.06kg NRL02

Levetiracetam 100 mg/mL
10.00 mg/kg Dose — 71 mg Total Dose
0.70 mLs Volume — PO Rte, BID Freq, 3 Days
Start 10-25-2018 — End 10-27-2018

MMU [redacted] F
6yrs 4mos 7.11kg NRL02

Prunes
Dose — Total Dose
Volume — PO Rte, SID Freq, 4 Days
Start 10-22-2018 — End 10-25-2018

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte, SID Freq, 7 Days
Start 10-22-2018 — End 10-28-2018

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte, SID Freq, 3 Days
Start 10-22-2018 — End 10-24-2018
(1602)

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5.3 mg Total Dose
0.50 mLs Volume — IM Rte, SID Freq, 2 Days
Start 10-23-2018 — End 10-24-2018

Famotidine 10 mg/mL
0.50 mg/kg Dose — 3.6 mg Total Dose
0.36 mLs Volume — IM Rte, SID Freq, 7 Days
Start 10-21-2018 — End 10-27-2018
Modified
Modified 10/21, DOSE GIVE IN

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 213 mg Total Dose
2.10 mLs Volume — PO Rte, BID Freq, 1 Days
Start 10-22-2018 — End 10-22-2018
Dose Ovrd | PLEASE have ready for SX to give

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody
Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 37

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/26/18		G	G	N	SO: BAR PE: lip trauma, superficial scratches noted on both upper + lower lips - c+D, Ø tx indicated @ this time. A: minor lip trauma (suspect fair fight) P: No tx. @ this time, CTM on MH.	[redacted]
10/2/18					✓pre-project physical __pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]

MMU [redacted] F
6yrs 5mos 7.32kg NRL02
Long Term Peanuts
1.00 serving/animal Dose — 1. serving Total Dose
1.00 serving Volume — PO Rte SID Freq 180 Days
10-02-2018 End 03-30-2019

10/2/18 MMU [redacted] 0.8 KET IM, BLED 3ML. D → 1310 NRL02 W.O. 3021
WT:
CAGE TIME 11:15 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___

10/3/18 MMU [redacted] BOX LOAD INTO TRANSPORT TRUCK NRL02 W.O. 3045
WT:
CAGE TIME 12:30 15MIN 3 30MIN___ 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___

SO: Transported to [redacted] for MRI, project NRL02
WO# 3045. Sedated with ketamine 0.8 mls,
Animal (was) / was not placed in Stereotax,
performed MRI per protocol, recovered fully,
returned to CNPRC home cage.
Animal (did)/did not receive Ketoprofen or
Buprenex IM

10/10/18 7.11 BOX WT VET REQUEST

10/22/18 MMU [redacted] 0.7 MLS KET, ~> SURGERY PREP W/O 3210 NRL02
WT: 7.06

10/22/18 SO: Rec'd in [redacted] prep wo# 3210, project NRL02
Surgically prepped, performed Bilateral cranial implants
See anesthesia log & surgery report. Recovered,
returned to home cage. Monitored until fully alert.
A: Bilateral cranial implants
P: POM X 7 days, Start RX

✓Charges ✓Admit ✓RX ✓Supps ✓Move Sheet
✓Surgery Log ✓Anesthesia Log ✓Surgery Report

Obs Form 12-16 G – Good, F – Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody
Minamazole 5.0 mg/ml; Diazepam 5.0mg/ml

Exhibit D

Adverse Effect Amendment: Inadvertent Use of Drugs

Amendment to Protocol #21222
Summary/Purpose: *Adverse Effect Amendment: Inadvertent Use of Drugs* [edit]
PI: (b) (6), (b) (7)(C)
Date Received: 08-29-2019
Funding Source(s): Neuralink Corp.
Protocol Approval Date: 07-11-2019
Review Status: ***Approved* - 10-17-2019**

1. Proposed Changes:

PURPOSE

We would like to submit an adverse effect amendment for the inadvertent use of Bioglue and the antimicrobial, bacitracin.

SUMMARY

On August 19, 2019, NRL performed a terminal surgical procedure in preparation for a scheduled upcoming survival surgery (Aug. 26, 2019). The purpose of the procedure was to collect post-operative electrophysiology data and tissue temperature data via thermocouple temperature sensors affixed to the animal subject. In addition to the Aug. 19th scheduled surgery, coordinated plans were made in advance between the CNPRC and NRL pathology teams to train the CNPRC Pathology Technicians stepwise on how to explant the implant in preparation for an after hours emergency.

At the time of surgery set up (~7:30am), the surgical irrigation fluids were primed with the antimicrobial bacitracin (50U/L of sterile saline). During surgery, bilateral craniotomies/durectomies were performed and electrode threads were implanted in one craniotomy and the thermocouple wire placed in the contralateral craniotomy . Furthermore, bilateral pillboxes and a unilateral external connector port was affixed to the animal subject caudal to the location of the craniotomies. At the time of skin closing (~2:00pm), the lead surgeon had concerns about the void in between the two implants and applied Bioglue to fill the dead space in between the implants on midline. After skin closure, electrophysiology and temperature data were collected for approximately 1 ½ hours before the AHT delivered the live animal to the Pathology Service [~4:00pm], where the animal was euthanized, perfused and explanted.

Gross presentation of the animal at necropsy to the Pathologist on duty revealed Bioglue had reached the surface of the brain. CNPRC Pathology Technicians noted having to trim excess Bioglue at the rim of the craniotomies to be able to remove the calvaria and preserve the brain.

DEVIATION FROM PROTOCOL

According to protocol, Bioglue and bacitracin were not listed for approved use. The protocol is a composite of a previous withdrawn protocol and miscellaneous amendments. One past amendment addressed the adverse effect of Bioglue coming in contact with an animal subject's brain surface. The preventative action arising from this event was to discontinue the use of Bioglue. Bioglue is marketed by CryoLife, Inc. as a surgical adhesive and review of the product safety information discloses warnings from previous animal studies showing "acute nerve injury" when directly applied to phrenic nerves." With respect to the use of bacitracin on protocol, the adverse effects section of the protocol [15C] stipulates the "use of antibiotic impregnated sterile flush for surgical irrigation" but did not list bacitracin in the drug table. Moving forward, we may use bacitracin (50U/L of sterile saline) in terminal and survival surgical procedures.

2. Justification for Proposed Changes:

The NRL lead surgeon did not realize that the use of Bioglue had been discontinued and that Bioglue and bacitracin were not listed as approved drugs on the protocol drug table.

To prevent future deviations from protocol, NRL is implementing a comprehensive retraining program for all ranking NRL team roster members listed on protocol about the importance and regulatory constraints and consequences of adhering to protocol.

Corrective Action Plan Moving Forward

To prevent non-compliance in the future we are putting in place i) a robust program of retraining, ii) a procedure review process, including iii) the use of checklists in planning for procedures, and iv) an update to the Neuralink IACUC training policy. We elaborate on these next: i) Retraining: We will re-train our animal users about their responsibilities in complying with the protocol, with an emphasis on each person's individual accountability.

This retraining will be provided via in-person training sessions and consist of a presentation of material followed by a quiz to assess competence.

Topics will include: - Background on federal regulations - How to access the protocol - The importance of following protocol - A review of the different sections of the protocol - A review of procedure checklists (see below) - Who to contact if there are any questions

The quiz will consist of a checklist for a hypothetical procedure under our approved protocol with some unapproved procedures, materials and drugs mixed in; the users will need to identify the unapproved items to pass the test. Once the training session has been completed, the roster of passing users will be provided to the UC Davis IACUC.

ii) Procedure Review: A procedure review packet will be created for each scheduled surgical procedure. This packet will include a brief description of the procedure, a checklist (see below) and a signature page. Refinements and other approved changes from previous procedures will be emphasized. All personnel participating in the surgical procedure will be required to review the procedure and sign off on the signature page at least 24 hours before the scheduled date. These documents will be brought to the planned surgical procedures and will be reviewable by CNPRC on request.

An example procedure review packet is attached to this amendment.

iii) Checklists: We will create checklists for each of our planned surgical procedures. These checklists will include a list of materials, chemicals and pharmaceuticals that we intend to use and a step-by-step break down of our planned procedures. This checklist will be brought to procedures (as a paper copy, and ideally electronically displayed in the procedure room) so that each drug/device can be easily checked against the protocol. In this way the process will be transparent and accountable to the CNPRC staff in the operating room. One or two Neuralink personnel who will be involved in the procedure (for example, the lead surgeon and scrub nurse) will be designated the responsibility of reviewing the checklist prior to each planned procedure and sign off that they have compared it to the currently approved protocol. An example checklist is included here.

iv) Neuralink IACUC Training Policy Update: The one-time retraining course (described above) has been added as a new mandatory hands-on training course to Neuralink's internal IACUC animal user training policy. All new personnel will be required by the Neuralink IACUC to complete this training prior to being added onto the Davis protocol and a refresher course is required every three years. This training documentation will be provided to the Davis IACUC.

3. Potential Adverse Effects:

To prevent any deviation in protocol in the future, we have put forth a retraining program structured on knowing the details contained within the protocol at all times. All listed protocol roster members will have a working knowledge of the protocol details and if at any point there is uncertainty, all listed personnel agree to seek clarification before proceeding accordingly. Conjointly, if and when a protocol concern is identified, NRL and CNPRC personnel will work together to address the issue to be able to ensure animal welfare and personnel safety.

4. Additional Animals:

N/A

5. Justification for Additional Animals:

N/A

Uploaded Documents:

upload/delete Amendment File

Uploaded File(s):
DocUpload-02-86335-300555_Amendment.pdf
DocUpload-03-86335-300555_Amendment.pdf
DocUpload-04-86335-300555_Amendment.pdf
DocUpload-05-86335-300555_Amendment.pdf

Amendment Request Status: Approved - 10/17/2019

Amendment ID 300555

Exhibit E

Veterinary, procedure, and health records for monkeys assigned to Neuralink protocols

CALIFORNIA NATIONAL PRIMATE RESEARCH CENTER

ANIMAL DEATH RECORD

Species: MMU

ID #: [redacted]

Date of Death: 1/14/20

Date Reported: 1/14/20

Present Location: [redacted]

Weight: 15.64

Sex: M

Pentobarbital Administered:

5.0 mls IV

[redacted] Initials

Type of Death:

- D ☐ Spontaneous Death
- X ☐ Experimental Design
- A ☐ Experimental Accident
- M ☐ Medical Cull Diagnostic
- K ☑ Medical Cull
- S ☐ Surgical Cull

ENT'D JAN 15 2020

VF 1/15/20

[redacted]

Probable Cause of Death (technician or clinician): ARL work order 4446 terminal Sx, humane euthanasia

Signed [redacted]

Pathological Diagnosis (clinician or pathologist): NGL, NRL Ø3

☐ Necropsy not performed

Signed [redacted]

D1010 (3/13)M

Original – Animal Chart Yellow – Data Entry

Final Necropsy Report

Animal ID	MMU [redacted]	**Report ID**	68758	**Report Complete**	13-FEB-20
Sex	M	**Death Type**	K	**Location**	[redacted]
Age	10 yrs 9 mon	**Weight (KG)**	15.64	**Work Performed**	14-JAN-20
Investigator	[redacted]	**Project**	NRL03	**Time Performed**	12:00 AM
Pathologist	[redacted]	**Clinician**		**Charge ID**	BZ59
Resident	[redacted]	**Hydration**	3	**Pathology Condition**	3

Gross Observations BODY AS A WHOLE

IFS=3/5. The small and large intestine contain moderate amounts of green-brown liquid digesta. The mucosa of the large intestine is slightly thickened. The heart is within normal limits.

Gross Diagnosis 1 CECUM AND COLON DIARRHEA

Gross Comments This animal was perfused and samples were collected per the NRL03 protocol. Standard histology is pending.

Final Observations BODY AS A WHOLE

The following tissues are within normal limits:
Slide 1: Lung
Slide 2: Liver and GB
Slide 3: Spleen
Slide 4: Left kidney
Slide 5: Right kidney
SLide 6: Stomach
Slide 7: Duodenum and pancreas
Slide 8: jejunum
Slide 9: Ileum
Slide 10: Cecum
Slide 11: Colon
Slide 12: Cervical spinal cord
Slide 13: Left side of heart
Slide 14: Right side of heart

Final Diagnosis 1 BODY AS A WHOLE NO REMARKABLE FINDINGS

Final Comments Although a colitis was of concern grossly, the examined histologic sections of large intestine were within normal limits.

CALIFORNIA PRIMATE RESEARCH CENTER

INTERVENTION / SURGERY

PROJECT:	ANIMAL SP ID# MMU	DATE OF EVENT MO DAY YR
NRL03	[redacted]	01/14/2020

PROCEDURE: Cranial Implant (TERMINAL)	ROOM: [redacted]	AGE: 10y 9m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 4446	WT: 15.64 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-10101	P-1640	Surgical Closure
T-00010	P-D5705	WB Necropsy

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Terminal NHP cranial microthread implant testing

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, animal's head placed into stereotax. Head sterile prepped. Skin incised in the midline approximately 1cm anterior to bregma and 4cm posterior to bregma. Fascia incised and muscle elevated from temporal ridge and retracted laterally. Just posterolateral to bregma bilaterally, 9mm burr holes were made, two on each side of midline. Exposed dura was resected. Implants were placed using investigational robot. Electronics were attached to skull using titanium implant screws. Cranial sealant was used to seal burr holes. A separate incision was made in order to pass a posterior titanium transcutaneous portal. The incisions were closed in a simple running fashion using 2-0 nylon monofilament. Animal removed from stereotax and euthanized.

Estimated blood loss: minimal

TIME IN: 855	POST OPERATIVE CARE:
TIME OUT: 304	N/A

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

(1) Re corrected [redacted] 1/14/20

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam:

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: Terminal - NRLP3

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight:_____ Temp:_____ HR:_____ RR:_____ BCS:_____ Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	See PE
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	9/18/19
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 1/6/2020 Dates Reviewed: 1/2019 - 1/2020 Reviewers initials: [redacted]

Comments: History of minor injuries 2° to SIB

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/13/19 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: No clinically significant changes

Imaging studies: (to be completed by Veterinary staff)

Date:_____ Radiographs:_____ U/S exam:_____

Comments:_____ Reviewers initials:_____

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

✓ Approved for project
_____ Approved for project pending lab review
_____ Approved for shipment
_____ Stable weanling
_____ Other

Comments: Approved for Jan 2020 SIB date

Examining Veterinarian: [redacted] Date: 1/6/20

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

California National Primate Research Center: Anesthesia Monitoring Sheet Page 1 of 1

Animal: MMM [redacted] **Home Room:** [redacted] **Date:** 1/[illegible] **Age:** 10 yr **Sex:** (M) / F **Wt. (Kg)** 15.8

Procedure: Nerve Sx terminal **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** 44416 **Project/ID:** NRL03

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP –, Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
Atropine	1.5ml	IM	808	~~[illegible]~~	~~[illegible]~~	~~IV~~	①				

Del: 807 **Sx Table:** 815 **Prep:** 830 **Start:** 839 **Cut:** 8:55 **Proc:** 9:42 - 2:31 **Close:** 2:31 - 3:04 **Recovery** N/A

Time	835	8:57	9:15	9:35	9:55	10:15	10:35	10:55	11:15	11:35	11:53	1209	1229	1248	104	120	1:40	2:00	2:20	2:46	3:00	3:20	3:40
Temp			97.2	97.6	98.3	98.9	99.3	99.2	99.0	98.9	98.7	98.6	98.4	98.3	98.2	98.1	97.9	97.7	97.7	97.7	97.8	97.8	98.3
160																							
150																							
140																							
130	•																						
120		°			•	•	•	•	•	•	•	•	•	•	•	•	°	°	°	°	°	°	°
110			•	•																		°	°
100																							
90	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
80	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
70																							
60	—	—																					
55					—	—	—				—	—	—	—	—	—	—	—	—	—	—	—	
50			—	—	—				—	—	—	—											
45	▲																						
40		▲																▲	▲				
35	×	×	×	×	▲×	▲×	×▲	×	×▲	×	×	×	×	×▲	×▲	×▲	×▲	×	×	×▲	×▲	×▲	×▲
30								▲		▲	▲	▲	▲								▲	▲	▲
25			▲	▲																			
20																							
15	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
10																							
5																							
Sigh																							
Fluids: LR (Total/Rate)	146/150	294/150	443/150	589/150	742/150	895/150	539/150	555/150	557/150	984/150	527/150	509/150	617/150	566/150	706/150	716/150	777/150	843/150	891/150	960/150	993/150	1046/150	1033/150
CRI: Fentanyl (Total/Rate)	5/15.8	9.5/15.8	15.1/15.8	19.9/15.8	25.7/15.8	30/15.8	35/15.8	41/15.8	46/15.8	51/15.8	56/15.8	103/13.8	64.5/13.8	69.2/13.8	72.8/13.8	76.6/13.8	81/13.8	85/13.8	89/13.8	96/13.8	99/13.8	103/13.8	103/13.8
Iso Fl (%) / Oxygen (L)	1.9/2.0	2.2/2.0	2.0/2.0	2.0/2.0	1.8/2.0	1.8/2.0	1.7/2.0	1.9/2.0	1.9/2.0	1.9/2.0	1.9/2.0	1.9/2	1.9/2	1.8/2	1.7/2	1.7/2	1.7/2.0	1.9/2.0	1.7/2.0	1.7/2.0	1.8/2.0	1.7/2.0	1.8/2.0

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy) *Initial* [redacted] rev.6/19-PC15A

OK animal perfused 1/14/23 [redacted]

23-01594_000142

UCD 0105

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
11/10/17		G	G	N	SO: BAR Re: Left side arm trauma. Noted superficial	
					skin wound approx. 1.5 cm in length. Appears CDI	
					w/ mod erythema. A: Healing arm wound by 2° int.	
					no evidence of pain or distress. P: CTM on MH.	[redacted]
11/30/17	WT: 15.30				MMU [redacted] / 1.7 ML KETAMINE, BLED 3.0MLS ~> 1310 W/O 3821 CRX01	
					TIME: 9:35 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___, 1.50HR ___ 1.75.HR ___ 2HRS ___	[redacted]
12/11/17					MMU [redacted] / 1.6 MLS KET, BLED 3 MLS WO#4041 RED01	
	WT:				CAGE TIME: 11:25 15MIN 1 30MIN 1 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75 ___ 2HR ___	[redacted]
12/13/17					MMU [redacted] / 1.7 CC KETAMINE IM, D→1302 WO#4073 RED01	
	WT: 15.43				CAGE TIME: 1:50 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75 ___ 2HR ___	[redacted]
12/13/17					X pre-project physical __ pre-shipment physical __ weaning physical	
					See associated P.E. sheet for additional information.	[redacted]
1/17/18					CT SCAN	[redacted]
1/17/18					MMU [redacted] 1.23 MLS TELAZOL IM, ~> SS2007 WO#	
	WT:				CAGE TIME: 12:30 15MIN 1 30MIN 1 45MIN 1 1HR 1 1.25HR 1 1.5HR 1 1.75 1 2HR 1	[redacted]
					Gave 3.0 mL flumazenil IM @ 3:15 pm, animal	
					monitored thru recovery. Recovered @ 3:45 pm	[redacted]
1/18/18	15.52				[illegible]	[redacted]
2/25/18		G	G	CC	SO: BAR, paired Re: Vomit; unable to confirm due	
					to recent housing A: possible emesis P: CTM	[redacted]
3/20/18	15.88				[redacted] 1.7 KET IM, BLED ___ MLS TB TEST L EYE 24HR ___ 48HR ___ 72HR ___	MONITORED UNTIL RECOVERED
						[redacted]
5.15.18	16.52				Box wt	[redacted]
5/19/18		G	G	N	SO: BAR (P) RE: Sneezing / Nasal discharge Sneezing: Yes / No Erythema: mild, moderate, none. Nasal discharge: clear, cloudy, none. A: Confirmed / Unconfirmed P: CTM on MH / OPM	[redacted]

Obs Form 12-1 ... rmal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/3/20	cont				A: MMU w/ SIB stable on tx	
MMU [redacted] M 10yrs 8mos 15.79kg CRX01 Simbadol (Buprenorp 0.72 mg/kg Dose 11.4 mg Total Dose 6.30 mLs Volume SC Rte Q3D Freq 49 Days Start 11-30-2019 End 01-17-2020					P: Extend Simbadol, CTM on OPM 1x/w await project assignment	[redacted]
1-6-20		G	G	N	SO BAR op: SIB: NO new trauma noted. Animal Active with NEPD.	[redacted]
MMU [redacted] M 10yrs 9mos 15.79kg CRX01 Simbadol (Buprenorp 0.72 mg/kg Dose 11.4 mg Total Dose 6.30 mLs Volume SC Rte Q3D Freq 41 Days Start 11-30-2019 End 01-09-2020					Reviewed record for preproject assessment. Changed simbadol duration to allow for surgery/ use in a terminal project SX CTM 1x/w	[redacted]
1-13-20		G	G	N	SO BAR op: SIB: NO new trauma noted. Animal Active with NEPD, Readily ate treats.	[redacted]
1/14/20					SO: Rec'd in [redacted] prep wo# 4446 project NRL03 Surgically prepped, performed Cranial implant See anesthesia log & surgery report. A: Terminal Cranial procedure P: Del to NX post procedure	
MMU [redacted] M 10yrs 9mos 15.79kg NRL03 Dexamethasone 10 mg/mL 1.00 mg/kg Dose 16 mg Total Dose 1.60 mLs Volume IM Rte SID Freq 2 Days Start 01-13-2020 End 01-14-2020 0.80 mLs Volume IM Rte SID Freq 2 Days Start 01-13-2020 End 01-14-2020					✓ Charges ✓ Surgery Log ✓ Anesthesia Log ✓ Surgery Report MMU [redacted] M 10yrs 9mos 15.79kg NRL03 Levetiracetam 100 mg/mL 14.00 mg/kg Dose 221 mg Total Dose 2.20 mLs Volume SC Rte BID Freq 2 Days Start 01-13-2020 End 01-14-2020 Dose Ordered Ended	
1/14/20	15.64				Sedated w/ 1.6 ket. Delivered to surgery prep per work order # 4446.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

CALIFORNIA NATIONAL PRIMATE RESEARCH CENTER

ANIMAL DEATH RECORD

Species: MMU ID #: [redacted]

Type of Death:

D ☐ Spontaneous Death

X ☒ Experimental Design

A ☐ Experimental Accident

M ☐ Medical Cull Diagnostic

K ☐ Medical Cull

S ☐ Surgical Cull

ENT'D JUN 26 2018

Date of Death: 6 / 26 / 18

Date Reported: 6 / 26 / 18

Present Location [redacted]

Weight: 9.38 kg

Sex: F

Pentobarbital Administered:

4.0 mls IV

[redacted] Initials

Probable Cause of Death (technician or clinician): IV pentobarbital overdose

Signe[redacted]

Pathological Diagnosis (clinician or pathologist): NRL02, endometrial hyperplasia

☐ Necropsy not performed

Signed [redacted]

D1010 (3/13)M

Original – Animal Chart Yellow – Data Entry

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
6/14/18					Cardiologist-guided echocardiogram performed due to:	
					pre-shipment / pre-project / clinical	
					Preliminary Results: Normal / LVH / Suspect (await final results)	
					Comments:	[redacted]
6/14/18					X pre-project physical __pre-shipment physical __weaning physical	
					See associated P.E. sheet for additional information.	[redacted]
6/14/18					MMU [redacted] / 1.0 MLS KET IM , D→ 1302 , BLED 3 MLS W/O 1710 SPF01	
					WT: 9.23 CAGE TIME 2:30 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	[redacted]
6/22/18					CT SCAN NRL02	[redacted]
6/22/18					MMU [redacted] / 0.64 MLS TEL IM, D→1304 W/O 1484	[redacted]
					WT: CAGE TIME 1:46 15MIN 1 30MIN 1 45MIN 1 1HR 1 1.25HR 1 1.5HR 1 1.75HR 2 2HR 3	
6/26/16					6/26/18 MMU [redacted] / 1.0 MLS KET IM, ~> SURGERY PREP W/O 1853 NRL02	
6/26/16					WT: 9.38 kg	[redacted]

MMU [redacted] F
12yrs 4mos 9.23kg NRL01

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1.4 mg Total Dose

0.14 mLs Volume — IM Rte — TID Freq — 3 Days
Start 06-26-2018 End 06-28-2018

SO: Recd in sx prep w/o 1853 NRL02. Surgically prepped, placed in stereotax, performed procedure per protocol.
A: terminal procedure.
P: Del → NX post procedure

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Final Necropsy Report

Animal ID	[redacted]	**Report ID**	65267	**Report Complete**	29-AUG-18
Sex	F	**Death Type**	X	**Location**	[redacted]
Age	12 yrs 4 mon	**Weight (KG)**	9.38	**Work Performed**	26-JUN-18
Investigator	[redacted]	**Project**	NRL01	**Time Performed**	12:00 AM
Pathologist	[redacted]	**Clinician**		**Charge ID**	BZ59
Resident	[redacted]	**Hydration**		**Pathology Condition**	

Gross Observations UTERUS

The endometrial surface is diffusely, variably expanded, up to approximately 0.5 cm in thickness. The endometrium is soft, white, and bulges on cut section.

Gross Diagnosis 1 ENDOMETRIUM HYPERPLASIA, DIFFUSE

Gross Comments The gross appearance of the endometrium is consistent with endometrial hyperplasia; discrete leiomyomas were not identified.

The brain was collected as a biospecimen.

Final Observations

ADRENAL GLAND

Slide 9: Multifocally, there is acellular, amorphous, eosinophilic, hyalinized material (amyloid)present within the deep cortex. There is minimal, multifocal mineralization within the mid to deep cortex.

CERVIX

Slide 7: The cervical submucosa is multifocally infiltrated by small to moderate numbers of neutrophils with few eosinophils, lymphocytes, and plasma cells noted. The lumen contains ample mucous admixed with degenerate neutorphils.

GASTROINTESTINAL TRACT

Slides 9-10:
Stomach: The superficial and deep gastric lamina propria is infiltrated by small to moderate numbers of lymphocytes and plasma cells. There are large lymphoid follicles present with prominent germinal centers.
Colon: The colonic lamina propria is diffusely infiltrated by small numbers of lymphocytes and plasma cells with few, scattered eosinophils and neutrophils. Occasionally, glandular epithelium is disorganized and/or attenuated with necrotic debris within the gland. There is frequently a blue brush border present along the luminal aspect of the mucosa.

Ileum, cecum: No significant findings.

HEART

Slide 4: There is moderate cardiomyocyte anisocytosis and anisokaryosis. There is minimal, multifocal mature fibrous connective tissue dissecting throughout the myocardium.

KIDNEY

Slide 2: No significant findings.

LIVER

Slide 1: There is a moderate increase in stellate cells scattered throughout the parenchyma. Multifocally, scattered throughout the parenchyma, there are few, small accumulations of mixed hematopoietic elements (extramedullary hematopoiesis).

LUNG

Slide 3: No significant findings.

NX

Physical Exam Certificate
California National Primate Research Center

Animal number: [redacted] Location: [redacted] Date of exam: 6/14/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: NRLR2

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 9.23 Temp: 98.3 HR: 180 RR: 20 BCS: 3.5 Gender: M (F) Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	mild tartar - scaled
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	(NAO)	A	NE	
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 6/14/18 Dates Reviewed: all Reviewers initial [redacted]

Comments: hx of heavy menses; uterine polyp

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 6/23/18 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: no clinical concerns

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

X Approved for project Comments:

___ Approved for project pending lab review

___ Approved for shipment

___ Stable weanling

___ Other

Examining Veterinar[redacted] Date: 6/23/18

Original- Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

NX 3040

[redacted], NRL42
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

6, 14, 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F 12 YR 3 MO 9.44 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☐ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.6	X 10 ^3/ µl
RBC	4.33	X 10 ^6/ µl
HEMOGLOBIN	9.4	gm/dl
HEMATOCRIT	30.2	%
MCV	70	fl
MCH	21.6	pg
MCHC	31.0	pg/fl
PLATELETS	4.94	X 10 ^5/ µl

☐ RETICULOCYTES % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 7.8 gm/dl

PLASMA COLOR:
- ☐ NO ABNORMALITIES
- ☒ HEMOLYZED Sv
- ☐ ICTERIC
- ☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.6 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	51	2856
LYMPHOCYTES	45	2520
MONOCYTES		
EOSINOPHILS	4	224
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
- ☒ ADEQUATE
- ☐ DECREASED ☐+1 ☐+2 ☐+3
- ☐ INCREASED ☐+1 ☐+2 ☐+3
- ☐ LARGE PLATELETS
- ☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
- ☐ ESSENTIALLY NORMAL
- ☒ HYPOCHROMASIA ☒+1 ☐+2 ☐+3 ☐+4
- ☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

6/14/18 [redacted]

6/14/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE 6/14/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

1292

[redacted] NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

6 / 14 / 18
DATE OF SAMPLE

F 12 YR 3 MO 1.44 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____HOURS COMMENTS:

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ X
HEMOLYZED ☐
ICTERIC ☐
LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☐ X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	144	mM/L	15		CPK (S,HP)	284	U/L	25		pH		
2		POTASSIUM (S,HP)	3.9	mM/L	16	*	ALK PHOS (S,HP)	54	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	111	mM/L	17		GGT (S,HP)	40	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	590	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	13		19		CHOLESTEROL (S,HP)	155	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.6	mg/dl	20		TRIGLYCERIDE (S,HP)	52	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.1	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	15	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.7	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	59	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.5	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.9	g/dl										
13		ALT (S,HP)	24	U/L										
14		AST (S,HP)	29	U/L										

REPORTED BY [redacted] DATE 6/14/18

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

*Verified by Repeat [redacted] 6-14-18
& Recorded by [redacted] 6/21/18

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

California National Primate Research Center Anesthesia Monitoring pg. 1 of ____

Animal Species and Number: MKU [redacted] Home Room: [redacted] Date: 10/26/18
Wt (kg): 9.37 Age: Sex: M/F Procedure: Brain electrodes ET Tube size: 3.5
Investigator [redacted] W/O# 1853 Project: NR102 IV Catheter Placement: (R) cap

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
atropine	1.0	IM	9:25	Hydromorphone	0.14	IM	1:02
hydromorphone	0.2	IM	9:25				
dopamine	@5 ug/kg/m	IV	∅				

Fluid Type LRS **Additives:** ∅ Temp Probe: (Y/N) Blood pressure Cuff: (Y/N)

HR-●, RR- **0**, Sys-▼, Dias-▲, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP —

START 10:05

END 1:00 pm

Time:	9:45	10:00	10:03	10:18	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	1:00
Temp:	93.7	93.1	92.9	92.8	92.6	92.3	92.1	92.0	92.1	92.3	92.6	92.9	93.3	93.6	93.9
160															
150															
140															
135															
130															
125															
120			●												
115	●														●
110												●			
105		●		●	●	●									
100	√	√	√	√	√	√	● √	● √	● √	● √	● √	√	● √	√	√
95														▼	
90			▼									▼	▼		
85					▼	▼	▼	▼	▼	▼	▼				
80				▼							▼				
75															
70															
65			—									—			
60		▼			—	—								—	
55				—			—	—	—	—	—		—		
50															
45			▲												
40	—	—		▲	▲	▲		▲	▲	▲	▲	▲	×▲	×▲	×▲
35	×	×	×	×	×	×	×▲	×	×	×	×	×			
30		▲													
25	▲														
20	∅														
15		∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
10															
SIGH															
Fluids total/rate	31/93	54/93	63/93	72/93	90/93	117/93	130/93	158/93	181/93	204/93	228/93	252/93	274/93	297/93	319/93
CRI: N/A															
Iso Fl (%)/ Oxygen (L)	1.3/1.5	1.2/1	1.4/1	1.8/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1	1.3/1

Complete

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL **Initials:** [redacted]
@RE- [redacted] 10/26/18

Post-operative monitoring record

Date: 11/14/19 Animal# [redacted] Procedure: Cranial injections

			Date	Date	Date	Date	Date	Date	Date
General Obervations			11/15/19	11/16/19	11/17/19	11-18-19	11-19-19	11/20/19	11/21/19
	Appetite		F	G	G	G	G	G	G
	Hydration		G	G	G	G	G	G	G
	Stool		A	N	N	N	N	N	N
	Incision		CDI	CDI	CDI	CDI	CDI.	CDI	CDI
		Score							
Physiologic parameters									
Pupils									
	Normal	0	0	0	0	0			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	0	0	0	0			
	Tachypnea	2							
Mucous membranes									
	Pink	0	0	0	0	0			
	Pale	2							
Posture									
	Sitting/standing upright	0	0	0	0	0			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0	0	0	0	0			
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	0	0	0	0			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score			0	0	0	0			
Initials:			[redacted]						

revised 7/2017

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: TAC01	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 11/14/2019

PROCEDURE: Cranial Injections	ROOM: [redacted]	AGE: 11y 6m
INVESTIGATOR: [redacted]	CAGE [redacted]	SEX: F
REQUESTOR: [redacted]	W/0: 3688	WT: 10.90 kg

SNOMED CODES		CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)			
T-10101	P-1000		
T-10101	P-1640	Surgical closure	

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Intracranial Injections

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, animal's head placed into stereotax. Head sterile prepped. Skin incised 4 cm. Fascia incised and muscle resected. One 1 cm x 1 cm burr hole was made in the skull, dorsal to the left entorhinal cortex using Medtronic Stealth Neuronavigation guidance. Hamilton syringes with 22G needles lowered to desired locations and injections of AAV-tau or AAV-empty vector were made into the left entorhinal cortex (2 sites, 20 uL each). Injections controlled using a Stoelting stereotaxic injector. Gelfoam placed into the burr hole. Muscle and fascia closed with 2-0 vicryl. Skin closed with 3-0 vicryl. Animal removed from stereotax and recovered.

Estimated blood loss: minimal

	POST OPERATIVE CARE:
TIME IN: 12:18 TIME OUT: 2:01	Ketoprofen SID X 3 days Hydroymorphone TID X 3 days Buprenex SID X 3days Cefazolin BID X 7 days Supplements SID X 3days

SURGEON: ASSISTANT: ANESTHETIST:

[redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

5503

[redacted] TACD1
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

[redacted] [redacted]
INVESTIGATOR REQUESTOR

11 / 14 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 13 YR 7 MO 8.8 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-Sx

HOSPITALIZED ☐ NO ☒ YES [redacted]
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= / µl
CD8= / µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	8.6	X 10 ^3/ µl
RBC	5.82	X 10 ^6/ µl
HEMOGLOBIN	14.8	gm/dl
HEMATOCRIT	46.6	%
MCV	80	fl
MCH	25.4	pg
MCHC	31.7	pg/fl
PLATELETS	4.47	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.8 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 400 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 8.6 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	56	4816
LYMPHOCYTES	37	3182
MONOCYTES	4	344
EOSINOPHILS	3	258
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 11/14/19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 1 of 1*

Animal: [redacted] **Home Room:** [redacted] **Date:** 11/14/19 **Age:** 14 dem **Sex:** M / F **Wt. (Kg)** 10.9

Procedure: Cranial ing **ET Tube Size:** 5.0 **Investigator:** [redacted] **W/O#:** 3688 **Project/ID:** TAC 01

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – ▲, Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
Atropine	1.0 mL	IM	1130	Cefazolin	0.8 mL	IV	1143	Ketoprofen	0.5 mL	IM	205
Hydromorphone	0.1 mL	IM	1140								

Del: 1130 **Sx Table:** 1140 **Prep:** 1202 **Start:** 1205 **Cut:** 1218 **Proc:** 1223 - 148 **Close:** 151 - 201 **Recovery** 2231

Time	1141	1153	1207	1223	1247	114	137	157
Temp								
160								
150								
140								
130	•			•				
120		•	•		•	•	•	•
110				▼				
100	✓	✓	✓	✓	✓▼	✓▼	✓▼	✓
90	▼							
80								
70		▼		—				
60								
55	—			▲	—	—	—	
50					▲			
45	▲	—		X				
40	X	X▲	X		X	X▲	▲X	X
35								
30								
25								
20								
15	Ø	Ø	Ø	Ø	Ø	Ø	Ø	O
10								
5								
Sigh								S
Fluids: LRS (Total/Rate)	25 / 100	45 / 100	72 / 100	95 / 100	131 / 100	185 / 100	219 / 100	253 / 100
CRI: (Total/Rate)	N/A							
Iso Fl (%) / Oxygen (L)	1.7 / 2	1.8 / 2	1.9 / 2	1.9 / 2	1.7 / 2	1.9 / 2	1.9 / 2	1.8 / 2

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy) *Initials:* [redacted] rev.6/19-PC15A

Complete

UCD 0118

23-01594_000155

California National Prima. search Center: Anesthesia Monitoring She. *Page 1 of 1*

Animal: Hull [redacted] **Home Room:** _____ **Date:** 11/6/19 **Age:** 11yr **Sex:** M (F) **Wt. (Kg)** _____

Procedure: MRI Skypa **ET Tube Size:** 5.5 **Investigator:** [redacted] **W/O#:** 3582 **Project/ID:** TAC01 / C283

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
Ketamine	1.0	IM	9354				
Dexmed.	0.3	IM	9356				
Atp	0.3	IM	1020				
Metaprozen	0.5ml	IM	9400				

Cut: Ø **Close:** Ø

Time	9534	10100
Temp		
160		
150		
140		
130		
120		
110	.112	
100	✓	.103 ✓
95		
90		
85		
80		
75		
70		
65		
60		
55		
50		
45	X	X
40		
35		
30	0	0
25		
20		
15		
10		
5		
Sigh		
Fluids: (Total/Rate)	N/A	
CRI: (Total/Rate)	N/A	
Iso Fl (%) / Oxygen (L)	Ø / N	Ø / N

Complete

Notes: _____

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy) *Init* [redacted] PC15 rev.6/19-

① scanning [redacted] 11/6/19

Animal ID# [redacted]

California National Primate Research Center

Page # 57

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11-19-19					AHS= G, GN SO: BAR POM Incision Sutures are = CDI, C&D, Scabbed MM= Pink, Activity Score = 0, PS= 0 Erythema: None, Mild, Moderate, Severe, Resolving Swelling: None, Mild, Moderate, Severe, Resolving Bruising: None, Mild, Moderate, Severe, Resolving A: Post Cranial Inj. P: CTM with POM / MH Reports	[redacted]
11/20/19					AHS= GCN SO: BAR POM Incision Sutures are = CDI, C&D, Scabbed MM= Pink, Activity Score = 0, PS= 0 Erythema: None, Mild, Moderate, Severe, Resolving Swelling: None, Mild, Moderate, Severe, Resolving Bruising: None, Mild, Moderate, Severe, Resolving A: Post CRANIAL INJ. P: CTM with POM / MH Reports	[redacted]
					① D/C ② CHARGES COMPLETE	[redacted]
12/16/19 MMU [redacted] 1.2 MLS KETAMINE/ BLED 30MLS/ D->1310 W/O 4119 TAC01 WT: 10.60 CAGE TIME 9:35 15MIN 2 30MIN 5 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___ Animal was delivered sedated as per protocol. Gave 0.3 ml dexmed/atip IM. Clipped and scrubbed dorsal neck. Collected 1.0ml CSF. Gave 5mg/kg ketoprofen IM. [redacted]						[redacted]
1/13/20 MMU [redacted] 1.1 MLS KET / BLED 30 MLS/D->1310 W/O 4445 TAC01 WT: 10.82 CAGE TIME: 9:10 15MIN 2 30MIN 7 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___ Animal was delivered sedated as per protocol. Gave 0.3 mls Dexmed/Atip, IM. Clipped and surgically prepped dorsal neck. Collected 1ml CSF and 30 mls blood. Gave 5mg/kg Ketoprofen, I M. [redacted]						[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 56

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/15/19					MMU [redacted] F 11yrs 6mos 10.90kg TAC01 Hydromorphone 10 mg/mL 0.15 mg/kg Dose — 1.6 mg Total Dose 0.16 mLs Volume — IM Rte — TID Freq — 2 Days Start 11-14-2019 End 11-15-2019 Ended | 1st dose by sx [redacted] C-132027 Upd15NOV\15:30 Prn15NOV\15:30	MMU [redacted] F 11yrs 6mos 10.90kg TAC01 Hydromorphone 2 mg/mL 0.15 mg/kg Dose — 1.6 mg Total Dose 0.80 mLs Volume — IM Rte — TID Freq — 1 Days Start 11-16-2019 End 11-16-2019 changed to 2mg/ml dose [redacted] C-132212 Ins15NOV\15:30 Prn15NOV\15:30
11/16/19		G	G	N	AHS= GGN SO: BAR POM CRANIAL INJ. Incision Sutures are = CDI, C&D, Scabbed MM= PINK, Activity Score = Ø, PS= Ø Erythema: None, Mild, Moderate, Severe, Resolving Swelling: None, Mild, Moderate, Severe, Resolving Bruising: None, Mild, Moderate, Severe, Resolving A: Post CRANIAL INJ. P: CTM with POM / MH Reports	MILD ERYTH. ON CHEST & UPPER BACK, (R) FOREARM. [redacted]
11/17/19		G	G	N	SO: BAR POM: cranial inj & ate supps, incision CDI very mild erythema, NEPO A: stable post sx P: cont PRM	[redacted]
11-18-19					AHS= GGN SO: BAR POM Incision Sutures are = CDI, C&D, Scabbed MM= PINK, Activity Score = 0, PS= 0 Erythema: None, Mild, Moderate, Severe, Resolving Swelling: None, Mild, Moderate, Severe, Resolving Bruising: None, Mild, Moderate, Severe, Resolving A: Post Cranial Inj. P: CTM with POM / MH Reports	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

MMU
Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initial
11/14/19					SO: Rec'd in [redacted] prep wo# 3688, project TACD1. Surgically prepped, performed Cranial inj. See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert. A: Cranial injections P: POM X 7 days, Start RX	

MMU [redacted] F
11yrs 6mos 10.90kg TAC01

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1.6 mg Total Dose
0.16 mLs Volume — IM Rte — TID Freq — 3 Days
Start 11-14-2019 End 11-16-2019
1st dose by sx

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 55 mg Total Dose
0.50 mLs Volume — IM Rte — SID Freq — 3 Days
Start 11-14-2019 End 11-16-2019
11/14 by sx

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 273 mg Total Dose
0.80 mLs Volume — IM Rte — BID Freq — 7 Days
Start 11-14-2019 End 11-20-2019

✓Charges ✓Admit ✓RX ✓Supps ✓Move Sheet
✓Surgery Log ✓Anesthesia Log ✓Surgery Report

MMU [redacted] F
11yrs 6mos 10.90kg TAC01

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .33 mg Total Dose
1.10 mLs Volume — IM Rte — SID Freq — 3 Days
Start 11-14-2019 End 11-16-2019
PM only

[redacted] F
11yrs 6mos 10.90kg TAC01

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 3 Days
Start 11-15-2019 End 11-17-2019

[redacted]

11/15/19		F	G	A	SO: BAR, all supps; active in cg; scratching occasionally. Reluctant to eat treats; sts int. animal is moving well off the perch bar; generalized erythemas. No neurologic deficit. CBC (11-14-19): WBC = 8.6x10³/ul, Hct = 46.6%, PT = 7.8 mg/dl, fibrinogen = 400 mg/dl, seg neut: 56% ⇒ WNL. A: Presumed post intra-cranial injection. P: Start benadryl. D/C to home cage. Finish POM. Vsts daily. Continue supplement. Finish tx

MMU [redacted] F
11yrs 6mos 10.80kg TAC01

Diphenhydramine 50 mg/mL
3.00 mg/kg Dose — 32 mg Total Dose
0.60 mLs Volume — IM Rte — BID Freq — 2 Days
Start 11-15-2019 End 11-16-2019
Weight Ovrd

[redacted]-132138-WO Ins15NOV)08:20 Prn15NOV)08:20

11-15-19					D/C From [redacted] to [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody
PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/16/19	cont				on project w/ multiple intubations reported to be difficult to intubate since tongue bleeds when grabbed for intubation. Small amt. of granulation tissue @ tongue tip should resolve, but may take longer due to repeated intubations. A: Tongue trauma resolving by 2nd int. P: CTM on MH and @ project sedations. If continues to bleed during intubations consider debridement and closure w/ sts	
10/17/19					DC FROM [redacted] → [redacted]	[redacted]
10/22/19 MMU [redacted]					BOX WEIGHT & LOAD TO TRANSPORT TRUCK/RETURN W/O 3358 TAC01	
WT: 10.90						[redacted]
					SO: Transported to [redacted] for MRI, project TAC01 WO# 3358. Sedated with ketamine 1.1 mls, Animal was / was not placed in Stereotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage. Animal did/did not receive Ketoprofen or Buprenex IM. Tattoo'd dots for the MRI markers	[redacted]
11/6/19 MMU [redacted]					BOX WT & LOAD / RETURN W/O 3586 TAC01	
WT:						[redacted]
11/8/19					SO: Transported to [redacted] for MRI, project TAC01 WO# 3586. Sedated with 1.1 mls ketamine. Animal was / was not placed in Steriotax. Performed MRI per protocol. Animal did / did not receive ketoprofen / buprenex. Recovered fully, returned to CNPRC home cage.	
					Rescan due to poor scan quality	[redacted]
11/14/19	10.90				Admin 1.0mls ket, D → surgery prep per w/o 3688 TAC01, no staff to monitor recovery	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# MMU [redacted] **California National Primate Research Center** Page

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/16/18		F/G	G	N	S: BAR. OPM - Resolving Diarrhea - PBS (3/19)	
					RO: Poor Appt (?). Ate bar, just fed likely.	
					Only normal stool noted. Poor App for chow;	
					possible preference for apps, which ended 3/14.	
					Recent wt stable last RO: PA = 3/7/18.	
					A: Resolving Diarrhea	
					PA: likely 2° to NRL training.	
					P: CTM w/x/w, assess to D/C next week.	[redacted]
3/23/18		G	G	N		
					S/O: BAR. OPM (diarrhea). PBS ended (3/19). Stool quality normal 1 week off tx. P: CTM on MH, D/C from OPM.	
		Q D/C			Snomed Q Recharge	[redacted]
4/11/18	11.21				1.2 cc KET	
					TB TEST LEFT EYE / RIGHT EYE 24HR ___, 48HR ___, 72HR ___ — ANIMAL MONITORED UNTIL RECOVERED	[redacted]
5/17/18					Moved to [redacted] per mo# 18-301.	[redacted]
10/22/18	10.99				Box wt	[redacted]
7/19/18					CTSCAN NRL01	[redacted]
7/19/18 MMU [redacted], LOC [redacted], 0.80 MLS KET IM ① W.O. 2203						[redacted]
WT:					CAGE TIME 8:10 15MIN 1 30MIN 1 45MIN 2 1HR 3 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	
7.20.18	10.31				1.2cc KET IM → SURGERY NRL01 W.O.# 2198	
7/20/18					SO: Rec'd in [redacted] prep w/o# 2198 NRL01.	
					Surgically prepped, placed in stereotax	
					performed cranial implant & recording	
					See anesthesia sheet & SX report	
					A: Terminal procedure	
					P: Del → NX per protocol	[redacted]

① should read TELAZOL 7-19-18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Pag

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
2/26/18	cont				and supps	[redacted]
2-27-18		F/P	G	N	SO: BAR. RE: Poor App 7 chow; Animal	
					Ate 0/7 chow, Did eat All supps	
					Plus forage. Normal amount of	
					Stool present in cage. Animal Active	
					with NSEPD. Suspect likes Supps	
					over chow. A: Fair Appetite - Stable	
					Animal. P: CTM.	[redacted]
3/1/18		5/7	G	N	SO: BAR. OP: Hematochezia / diarrhea. Lots of stool in pen,	
					all wnl. Much brighter this morning + took several treats.	
					Ate BB + PBS + supps. A: Resolving diarrhea. P: CTM on	
					OP 1x/week.	[redacted]
3/2/18		P/F	G	N	SO: BAR Re: Poor appetite. Ate 1 chow + boost bar,	
					all forage and PBS. Readily ate apple pieces.	
					A: Poor app. for chow, fair app. for supps. P: CTM on MH.	[redacted]
3/7/18		P/F	G	N	SO: BAR Re: Poor appetite. Ate 0 chow, ate all forage,	
					readily ate apricots. Noted MMH ate PBS + boost	
					bar. A: Poor app. for chow, Fair app. for supps +	
					treats. P: CTM on OP + MH.	[redacted]
3/8/18		1/7	G	N	SO: BAR. OP: Bloody diarrhea. Ate bars, ate PBS. All	
					Stool wnl in pen. Took treats. Moderate amount of Stool	
					in pen. A: Resolving diarrhea on PBS, resolved hematochezia -	
					change to diarrhea / resolving liq stool. P: CTM on OP.	
					continue PBS, add FTV for variable bypaces	[redacted]
3/16/18	11.40				BAR	[redacted]

MMU [redacted] [redacted] M
10yrs 10mos 11.44kg NRL02

Fruit + Veggies

Dose Total Dose

Volume PO Rte SID Freq 7 Days

Start 03-08-2018 End 03-14-2018

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/24/18	Cont.				in cage, not eating PBS. A: Poor app for chow, fair	
					app. for supps. Not eating PBS and poor stool	
					quality. P: Cont. tx, CTM on OP + MH.	[redacted]
2/24/18		?	G	L	SO: Bar 10cm Animal readily ate 10's	
					of dates & some peanut butter dried apricots or	
					sandwich. Gave 1 dose (0.5 mls)	
					benzine as animal seemed to have	
					some potential discomfort A:	
					Probable shigella on tx, gave a	
					dose of benzine. Variable appetite	
					P: CTM daily cont enro (2/27) & supps	
					to increase intake (3/1)	[redacted]
					SO: 1pm - animal was moving around	
					the cage more, more active & interactive	
					readily drank OJT	[redacted]
2/25/18		F	G	N/L	SO: Bar OP: bloody diarrhea. Re: poor app; animal	
					ate produce, left some nuts, left chow, ate forage	
					no blood seen in stool A: variable appetite and	
					stool, on tx P: CTM	[redacted]
2/26/18		P/G	G	N	SO: Bar, OPM: Bloody diarrhea. Re: Poor	
					App (? chow) Animal has ? chow, Ate	
					Scratch, ate PBS, ate fruit & veggie, took	
					3 apricots, Adequate normal stool	
					in cage. Active. NFSD. Ate partial	
					peanuts.	
					A: Poor Appetite for chow, good appetite	
					for supps.	
					P: Start bars per DVM, CTM on Rx	

MMU [redacted] M
10yrs 10mos 11.44kg NRL02

Bar
2.00 bar/animal Dose — 2.00 Bar Total Dose

2.00 Bar Volume — PO Rte — SID Freq — 27 Days
Start 02-26-2018 End 03-24-2018

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
2/21/18					needed, contact SRA	[redacted]

MMU [redacted] [redacted] M
10yrs 10mos 11.44kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1.00 sndwch Total Dose
1.00 sndwch Volume — PO Rte — BID Freq — 27 Days

Admit ⊗ Prob. Sheet ⊗

2/22/18		?	G	BL	SO: QAR Re: Poor appetite Re: Bloody liquid stool. Noted bloody liquid stool in cage pan. Unable to assess appetite. Cage Δ prior to time of observation. MMU readily ate treats. A: Confirmed poor stool quality, unable to confirm app. NEPD. P: CTM on OP & NH	[redacted]
2/23/18		P/F	G	N/SS, B	SO: QAR to lethargic. OP: Bloody diarrhea, ~60% normal stool / 40% SS, ~40% +/- frank blood. Tail base staining +/- blood. Only ate 1/2 PBS, took 1 treat but barely ate it and didn't eat more (unusual for him), hunching. No evidence of anything recently done to him. A: Hematochezia + SS stool +/- lethargy or depression. P: Although this animal likely has a depressed temperament, elated to start antibiotics due to his clinical presentation + because he hasn't been reported for bloody stool yet. CTM on OP.	[redacted]

MMU [redacted] [redacted] M
10yrs 10mos 11.44kg NRL02

Enrofloxacin 100 mg/mL
10.00 mg/kg Dose — 114 mg Total Dose
1.10 mLs Volume — IM Rte — SID Freq — 5 Days
Start 02-23-2018 — End 02-27-2018
Dose Ovrd

Peanuts
1.00 serving/animal Dose — 1.00 serving Total Dose
1.00 serving Volume — PO Rte — SID Freq — 7 Days
Start 02-23-2018 — End 03-01-2018

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 7 Days
Start 02-23-2018 — End 03-01-2018

2/24/18		P/F	G	B/L	SO: QAR OPM: Blood diarrhea + Re: Poor appetite. Noted sm. amount of bloody diarrhea in pan ~1ml (fresh). MMU appears quiet, lethargic vs depressed. Ate 0 chow, some forage, all supps & readily ate banana this morning. Noted 2 PBS	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
12/26/17		G	G	N	SO: OPM (liq stool). BAR. All stool normal; on treatment. A: Stool normal on tx. P: Continue tx as prescribed. Assess to D/C upon completion of tx.	[redacted]
1/2/18		5/7	G	N	S/O: BAR. OPM(diarrhea). On PBS (ending 1/6/18). Stool quality improved on tx. P: Continue tx as prescribed. CTM for one week beyond completion of tx to ensure no recurrence off tx. — Ate PBS. Small amount of normal stool in pan. Took treats. Hunching.	[redacted]
1/5/18	11.44				DR ag	[redacted]
1/8/18		G	G	N	S/O: BAR. OPM(diarrhea). On PBS (ending 1/6/18). Stool quality improved on tx. P: Continue tx as prescribed. CTM for one week beyond completion of tx to ensure no recurrence off tx. — Took treats.	[redacted]
1/17/18		7/7	G	N	SO: BAR. OP: diarrhea. All stool ↓↓. A: Resolved diarrhea. P: CTM on OP x 1 more week, as he relapses often.	[redacted]
1/17/18					CT SCM ✓	[redacted]
1/17/18	MMU [redacted] 0.91 MLS TELAZOL IM, ~> SS2007 WO#					
WT:	CAGE TIME: 12:30 15MIN ✓ 30MIN ✓ 45MIN ✓ 1HR ✓ 1.25HR ✓ 1.5HR ✓ 1.75 ✓ 2HR ✓					[redacted]
					Gave 3.0 mL flumazenil IM @ 3:15 pm, animal monitored thru recovery. Recovered @ 3:45 pm	[redacted]
1/24/18		7/7	G	N	SO: BAR. OP: Diarrhea. Small amt of normal stool in pan. Took treats. A: Resolved diarrhea. P: D/C for OP + CTM on MH	[redacted]
					✓ D/C ✓ Snomed ✓ Recharge	
2/21/18		G	G	1/3	SO: BAR. R/C: bloody liqdstl ; liquid stool with fresh frank blood, animal is bright and interactive. A: hx of poor stool quality. P: per DVM start PBS, no R/C	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/28/17	cont				P: CTM on OPM for another week for diarrhea since PBS ended 11/27. CTM nutrition as well. On PRPC list, awaiting STP. If poor app / diarrhea recurs, consider anti-depressant therapy until STP.	[redacted]
11/30/17	10.98				1 cc meat given → [redacted] wpt 3821	[redacted]
11/30/17					MMU [redacted] LOC: [redacted] KET/TEL: _____ MLS CAGETIME: 10:35 15MIN 3 30MIN ___ 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___ 1-LAYING DOWN. 2-MOVING. 3-SITTING UP	
						[redacted]
12/8/17		2/7	G	N/S	SO: BAR to QAR. OPM: diarrhea. Some normal + SS stool observed today. Took treats. Was assigned to a ~1 month project w/ terminal end point. A: Intermittent, chronic diarrhea. P: CTM on OPM, add PBS, monitor stool quality + nutrition	[redacted]

MMU [redacted] M
10yrs 7mos 10.98kg NRL02

Probiotic Sandwich
2.00 sndwch/animal Dose — 2.00 sndwch Total Dose
2.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 12-11-2017 — End 01-06-2018
Dose Ovrd

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/12/17		P/F	G	N	SO: BAR Re: Poor appetite. Ate 1 chow + forage + PBS. Reading ate. apple piece. Noted normal amount of stool in cage. Suspect MMU is grazing. A: 1st recent report for PA. Poor app. for chow, fair app. for fresh fruit. P: CTM on OP + MH.	[redacted]
12/14/17		1/7	G	N	S/O: BAR. OPM(diarrhea). On PBS (ending 1/6/18). Stool quality improved on tx. P: Continue tx as prescribed. CTM for one week beyond completion of tx to ensure no recurrence off tx. Ate PBS. Was just fed. Moderate stool in pan, + all wnl. Took tx. Consider keeping him on PBS until project endpoint in ~1 month.	[redacted]
12/20/17		G	G	N	S/O: BAR. OPM(diarrhea). On PBS (ending 1/6/18). Stool quality improved on tx. P: Continue tx as prescribed. CTM for one week beyond completion of tx to ensure no recurrence off tx. Normal stool only adequate amount	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 07/20/18
PROCEDURE: Cranial Implant (TERMINAL)		ROOM: [redacted]	AGE: 11y 3m
INVESTIGATOR:		CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]		W/0: 21.98	WT: 10.99 kg

SNOMED CODES		CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)			
T-10101	P-yy444	Craniotomy	
T-10101	P-1640	Surgical closure	

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Cranial heat dissipation study

Animal was prepared for surgery and brought into the operating room. Once sedated thoroughly on isoflurane, the animal's head was placed into stereotax. Head was prepped. A midline skin incision was made spanning approximately 2cm anterior to bregma and 6 cm posterior to bregma. The fascia was incised in the midline and the muscles were elevated laterally from the temporal ridge with the use of unipolar cautery. The muscles were then sutured down laterally with multiple 2-0 Vicryl sutures. Starting on the right side, a burr hole was made 15 mm lateral to bregma with the most anterior portion of the burr hole at that point. The burr hole was enlarged with side cutter. The dura was excised to expose the brain. On the left, a second burr hole was made 18 mm lateral to bregma with most anterior portion of the burr hole 5 mm posterior from bregma. The dura was excised to expose the brain. Implants were placed using investigational robot. Electronics were attached to skull using titanium implant screws. Cranial sealants were used to seal burr holes. Temperature probes were placed in various locations relative to the burr holes and tunnel anteriorly out of the incision. The electronic wires were tunneled posteriorly on the left side out of the incision. The incision was closed in a simple running fashion using 2-0 nylon monofilament. The animal was hooked up to electrophysiology hardware to ensure the implanted electronics were satisfactory. The animal was switched off of isoflurane and place on a propofol continuous drip. The animal as removed from the stereotax. Electrophysiology and temperature readings was continuously monitored. Functional sensation testing was performed. The animal was disconnected from the electronic and euthanized.

Estimated blood loss: 5 ml

TIME IN: 9:10 am TIME OUT: 4:00 pm	POST OPERATIVE CARE: N/A

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center Anesthesia Monitoring pg. 1 of 2

Animal Species and Number: MMU [redacted] Home Room [redacted] Date: 7/20/18
Wt (kg): 10.99 Age: 1 43mo Sex: M/F Procedure: Cranial Implant ET Tube size: 6.0
Investigator: [redacted] W/O# 21198 Project: NRLD1 IV Catheter Placement: R Cph

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Atropine	1.1mL	im	800	Hydromorphone	0.16mL	im	8:40, 12:40
				cefazolin	0.80mL	IV	9:39, 11:45
				Atropine	1.1mL	im	1140

Fluid Type LRS **Additives:** N/A Temp Probe: Y/N Blood pressure Cuff: Y/N

HR-•, RR-0, Sys-▼, Dias-▲, ETCO2-X, SPO2-√ S-sigh (if on Vent. put line through RR-O) MAP –

SX 9:10 240 RECS 251 400

Time:	8:23	8:29	8:45	9:00	9:15	9:31	9:45	10:00	10:15	10:20	10:25	10:30	10:40	10:51	11:00	11:15	11:34	11:45	12:00	12:15	12:30	12:45
Temp:	93.8	93.2	91.4	90.5	90.0	89.5	89.3	89.1	89.3	89.4	89.5	89.6	89.8	90.2	90.9	91.4	91.8	91.8	91.9	92.0	92.0	92.1
160																						
150																						
140																						
135																						
130	•																					
125		•																				
120																						
115																						
110																						
105			•																			
100																			•			
95	✓	✓	✓	✓•	✓•	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓•	✓	✓	✓	•✓▼
90						•									▼			▼	▼		▼	
85		▼				▼	•	•	•	•	•	•	•	•	•	•▼	▼					
80			▼							▼	▼											
75				▼	▼				▼				▼	▼								
70							▼	▼				▼										
65																						
60					—																—	
55																			—	—		—
50		—	—							—	—			—	—	—	—	—				
45					▲	—		—	—				—									
40	▼			—			—					—										
35			X▲	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			▲	
30	—X	▲X											▲	▲	▲	▲	▲	▲	X▲	X▲	X	X▲
25						▲	▲	▲	▲	▲	▲	▲										
20				▲																		
15	∅▲																					
10		∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
SIGH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluids total/rate	16/100	12/100	41/100	66/100	88/100	115/100	138/100	166/100	190/100	200/100	203/100	216/100	233/100	251/100	264/100	288/100	326/100	341/100	364/100	391/100	414/100	436/100
CRI:	N/A																					
Iso FI (%)/ Oxygen (L)	2.3/.5	2.3/.5	2.0/2.0	2.1/2.0	1.9/2.0	1.9/2.0	1.9/2.0	1.9/2.0	1.6/2.0	1.6/2.0	1.6/2.0	1.5/2.0	1.5/2.0	1.6/2.0	1.5/2.0	1.5/2.0	1.5/2	1.5/2	1.5/2	1.5/2	1.5/2	1.5/2

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials [redacted]

California National Primate Research Center Anesthesia Monitoring pg. 2 of 2

Animal Species and Number: MMU [redacted] Home Room [redacted] Date: 7/20/18
Wt (kg): 10.99 Age: 11 y 3 m Sex: (M)/F Procedure: cranial implant ET Tube size: 6.0
Investigator: [redacted] W/O# 2198 Project: NRL01 IV Catheter Placement: (L) cph

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
				Cefazolin	0.8mL	IV	1140
	N/A						

Fluid Type LRS **Additives:** Ø Temp Probe: (Y)/N Blood pressure Cuff: (Y)/N
HR-●, RR-**0**, Sys-▼, Dias-▲, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP –

Time:	1:00	1:18	1:36	1:54	2:09	2:24	2:35		2:51	3:04	3:15	3:30	3:50	3:53
Temp:	92.6	93.2	93.9	94.3	95.1	95.4	95.7		95.8	95.5	95.3	95.1	94.8	94.8
160														
150														
140														
135														
130												▼		
125														
120														
115														
110											▼			
105										▼			▼	▼
100	●	●	●	●	●	●	●		●	●	●	●	●	●
95		●		●	●	●	●		●	●				
90		▼			▼						●	●		●
85			▼	▼		▼	▼		▼				●	
80														
75														
70												—		
65										—	—			
60													—	—
55		—	—	—					—					
50	—				—	—						▲		
45							—			▲	▲			
40							—		—					
35	X	X	X	X	X	X	X		▲	X	X	X	▲X	▲X
30	▲	▲	▲	▲	▲	▲								
25							▲							
20														
15														
10	Ø	Ø	Ø	Ø	Ø	Ø	Ø		Ø	Ø	Ø	Ø	Ø	Ø
SIGH	N/A	—	—											
Fluids total/rate	462/100	485/100	525/100	558/100	580/100	603/100	623/100		Stopped					
CRI: Propofol	MA	—	—	—	—	—	—		0.4/10	2.4/10	9.1/10	6.6/10	10.1/10	10.4/10
Iso FI (%)/ Oxygen (L)	1.5/2	1.5/2	1.5/2	1.5/2	1.5/2	1.4/2	1.5/2		0/2	0/2	0/2	0/2	0/2	0/2

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

Animal ID# MMU [redacted]

California National Primate Research Center

Page # 27

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/23/20		F	G	N	S: BAR Re: Poor appetite. Ate 0 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1ST recent confirmed report. P: CTM on MH / OP — RECEIVED ~150 EXTRA CALORIES FROM LAB STAFF	
7/24/20	15.42				Box weight	[redacted]
8.21.20	15.42				[redacted] [redacted] 8/21/2020 ___mls Ket. BCS= 3.5 Tartar: 0 1 2 3 4 Teeth Scaled Y/N TB Test: R L Eye 15.42 kg 24hr____ 48hr____ 72hr____ PM R hand dislocated P2 fused ANIMAL MONITORED UNTIL RECOVERED	[redacted]
9/19/20		G	G	N	SO: BAR , Re: Poor appetite. Ate _____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP — 3 chow consumed in AM, readily ate treats.	[redacted]
9/18/20	15.87				Box Weight	[redacted]
9/28/20					__pre-project physical X pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]
9/28/20	14.94				MMU [redacted] NRL03 WO 2814 1.6 ML KET / BLED 6 MLS / D → 1310 TB TEST (R) EYE – 24HR:__ 48HR:__ 72HR:__ CAGE TIME: 2:25 15MIN 2, 30MIN 3, 45MIN____ 1HR____ 1.25HR____, 1.5HR____, 1.75HR____, 2HR____	[redacted]
10/1/20					Animal Shipped to Neuralink	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
1/14/20		G	G	N	SO: BAR ①, RE: Vomit. Cage cleaned by Per project staff, slurry time of observation. A: Unable to confirm emesis. 1st recent report offered 1/13 mistaken for emesis. NEPP. P: CTM on MH / OP.	[redacted]
1/21/20					So: MMU inadvertently received levetiracetam, famotidine, Dexamethasone and cefazolin (one dose of each on 1/21). MMU was later determined not a good sx candidate and did not have surgery. A: MMU stable post tx. P: CTM on MH, no tx indicated @ this time	
1-24-20	13.91					[redacted]
2-7-20	13.79					
2/21/20	13.98				Box weight	
3/6/20	14.21				Box weight	
5/1/20	14.44				Box weight	
5/29/20	15.52				Box weight	
6/26/20	15.21				Box weight	
7/23/20		F	G	N	SO: BAR Re: Poor appetite. Ate chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	[redacted]

MMU [redacted] M
7yrs 8mos 13.32kg NRL03

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 10. mg Total Dose
1.00 mLs Volume — IM Rte — SID Freq — 0 Days
Start 01-22-2020 End 01-22-2020

Famotidine 10 mg/mL
0.50 mg/kg Dose — 6.7 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 3 Days
Start 01-20-2020 End 01-22-2020

Levetiracetam 100 mg/mL
14.00 mg/kg Dose — 186 mg Total Dose
1.90 mLs Volume — SC Rte — BID Freq — 3 Days
Start 01-20-2020 End 01-22-2020

Box weight

Box weight

Box weight

Box weight

Box weight

RECEIVED ~150 EXTRA CRONIES FROM LAB

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
①					Animal #: MMU [redacted] Room#: [redacted]	
12/10/19		G	G	N	SO: BAR, OPM: wt. loss; gd app. per food log, NEPD.	
					A: gd app. for chow.	
					P: ctm on OP 1x/wk + as reported.	
						[redacted]
①					Animal #: MMU [redacted] Room#: [redacted]	
12/16/19		G	G	N	SO: BAR (P) OPM: wt. loss; gd app. for food log, NEPD, wt ↑.	
					A: gd. app. for chow. sl. wt ↑.	
					P: ctm on OP 1x/wk + as reported.	
						[redacted]
12/31/19		G	G	N	SO: BAR (P) OPM: wt. loss; gd app. per food log, wt. ↑	
					A: gd app. for chow, sl. ↑ in wt.	
					P: ctm on OP 1x/wk + on MH.	[redacted]
1/2/20					A: Good app per feed log + wt ↑ off	
					Supps. P: CTM 1x/wk on OPM, consider	
					D/C from OPM if PBHS assessment normal	
					(email sent).	[redacted]
1/6/20		G	G	N	SO: BAR (P) OPM: wt. loss; gd app. per food log, NEPD, MMU active.	
					A/P: see 1/2, D/C from OPM, ctm on MH.	
					D/C Snomed Recharge	[redacted]
1/10/19	13.45					[redacted]
1/14/20	13.32				BOF WT PER O.P. REQUEST	[redacted]

① LE 12/31/19 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 24

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/13/19	12.55				Box Weight	[redacted]
12/27/19	12.75					

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9-6-19	14.01				[redacted] [redacted] **9/6/2019**	
					1.8 mls Ket. BCS=2.5 Tartar: 0 (1) 2 3 4 Teeth Scaled (Y) N	
					TB Test: (R) L Eye 24hr___ 48hr___ 72hr___	
					Patchy Alopecia Arms + Legs	
					ANIMAL MONITORED UNTIL RECOVERED	[redacted]
9/20/19	~~13.8~~ ①				Box Weight	[redacted]
10/4/19	14.1					
11/1/19	13.1					
11/13/19					moved to [redacted] per move # 19-810	
11/27/19	12.57					
11/29/19		P	G	N	SO: BAR Rec. poor app; eagerly ate treats, 6 chow left in cage A: 1st recent report for poor app P: Q7m on routine MH	[redacted]
12/2/19					__pre-project physical X pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]
12/2/19 MMU [redacted] 1.5 MLS KET/BLED 6 MLS/D->1310 W.O. 3868 PRS02						
WT: 12.00	CAGE TIME 2:35 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___					
12/3/19					Significant wt loss noted, particularly in past 3 months. CBC + Chem show no clinically significant changes A: wt loss, origin not known, but could be related to recent relocations. P: Admit to OP, consult w/ project staff on feeding + request behavior assessment	[redacted]

① Sloppy writing. Animal weight is 13.8. [redacted] 9/20/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/28/18						
					SO: Transported to [redacted] for MRI, project NR182	
					WO# 2614. Sedated with ketamine 1.6 mls,	
					Animal was / was not placed in Steriotax,	
					performed MRI per protocol, recovered fully,	
					returned to CNPRC home cage	
					Animal did / did not receive Ketoprofen IM, 0.77 mls	
					Post MRI gave 0.7 MLS Reglan, due to emesis.	[redacted]
8-28-18					MOVED TO [redacted]	
9/18/18					1.6 MLS KETMINE IM, BLED 3 MLS, ROOM ROUND UP	
WT: 15.10					TB TEST RIGHT EYE 24HR---- 48HR---- 72HR----, ANIMAL MONITORED UNTIL RECOVERED	[redacted]
11-19-18	16.06				Box wt	
3/29/19					1.8 MLS KETMINE IM, BLED ____ MLS, ROOM ROUND UP,	
WT: 16.45					TB TEST LEFT EYE 24HR-- 48HR-- 72HR--, ANIMAL MONITORED UNTIL RECOVERED	[redacted]
5/6/19					Moved to [redacted] M/# 19.286	
5/17/19	16.2					[redacted]
5/30/19					Moved → [redacted] move # 19.341	
					Animal #: [redacted] Room# [redacted]	
7/20/19	15.3					
						[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/7/18	MMU [redacted] 1.2 MLS KET IM, BLED 3 MLS SPF01 W/O 5021					
WT:	CAGE TIME: 9:20 15MIN 1 30MIN 2 45MIN 3 1HR __ 75MIN __ 1.5HR __ 85MIN __ 2HR __					[redacted]
3/12/18	14.12				17 KET IM, BLED 3 MLS TB TEST L EYE 24HR ✓ 48HR ✓ 72HR ✓ MONITORED UNTIL RECOVERED	[redacted]
5-9-18	15.35				BOX WT	[redacted]
5/10/18		G	G	N	SO: BAR (P) RE: Nasal Discharge. No coughing or sneezing. Nasal discharge: (clear), cloudy, none. A: (Confirmed) / Unconfirmed. _____ report. P: CTM on (MH) / OPM	[redacted]
7-3-18	15.85				BOX WT	[redacted]
7/31/18					CTSCAN NRL02 ☒	[redacted]
7/ 31/18	MMU [redacted] 1.0 MLS TELAZOL IM W.O. _____					
WT:	CAGE TIME 7:45 15MIN 1 30MIN 1 45MIN 1 1HR 2 1.25HR 2 1.5HR 2 1.75HR 2 2HR 3					[redacted]
8/3/18	MMU [redacted] 1.6 MLS KET IM, BLED 3 MLS, D→ 1310 NRL02 W.O. 2407					
WT: 15.51	CAGE TIME 8:55 15MIN 1 30MIN 2 45MIN 3 1HR __ 1.25HR __ 1.5HR __ 1.75HR __ 2HR __					[redacted]
08/03/18	X pre-project physical __ pre-shipment physical __ weaning physical See associated P.E. sheet for additional information.					
8-24-18					MOVE FROM [redacted] → [redacted] PER MN# 18-501	[redacted]
8-24-18					MOVE FROM [redacted] → [redacted]	
8-24-18					MOVE FROM [redacted] → [redacted] PER REQUEST	
8-24-18					MOVE FROM [redacted] → [redacted] PER REQUEST	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/11/19	(cont)				D: opening on caudal end of incision of implant P: CTM daily, clean as needed. Await labs for culture.	[redacted]
1/11/19 MMU [redacted] 0.7 MLS KET/D→ SURGERY W/O 4149 NRL02 WT: 6.83 CAGE TIME 2:41 15MIN 1 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						
1/14/19		G	G	N	So: BAR OPM: Cranial implant ~0.75x0.75cm defect @ Rostral part of implant. Implant Showing through skin edges are mildly erythematous w/ very small amt. of frank blood Animal appears to be picking @ implant A: Cranial implant w/ defect. P: Start keto + ~~ceph~~ ① cefazolin Monitor defect daily, If animal continues to pick consider Simbadol Nx to be scheduled per lab via e-mail ☒	[redacted]
1-15-19					Per SBA, animal will be Nx on 1-16-19 after 30 minutes recording @ 9:00 AM	[redacted]
1/16/19 MMU [redacted] 0.7 MLS KET, D→ NECROPSY W/O 4244 NRL02 WT: 6.90						[redacted]
1/22/19					☒ Recharge	[redacted]

MMU [redacted] F
6yrs 10mos 6.83kg NRL02

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 171 mg Total Dose
0.50 mLs Volume — IM Rte — BID Freq — 5 Days
Start 01-14-2019 — End 01-18-2019

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 34 mg Total Dose
mLs e — IM Rte — SID Freq — 3 Days
: 01-14-2019 — End 01-16-2019

① RE [redacted] 1/14/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/4/19		F	G	N	SO: BAR, (P), OPM: Resection (cranial implant, margins WNL, no crusting, mild swelling at head incision CTD and scabbing	[redacted]
					A: Stable cranial implant, swelling most likely scar tissue	
					P: Decrease VIS ✓ 2x/week per DVM CTM (in OPM	[redacted]
1/7/19		G	G	N	SO: BAR, paired OP, cranial implant; CTD, mild crusting at skin edges on posterior edge, no attention to implant, no discharge or swelling noted A: stable cranial implant P: CTM 2x/wk, assess to clean implant 1/11 if project has not already cleaned it this week	[redacted]
1/11/19		G	G	N	SO: BAR (P) cranial implants crusting/dry moving normally through cage A: stable post cranial implant P: CTM 2x/week, assess to clean implant 1/11 if project hasn't done so	[redacted]
1/11/19					SO: Rec'd in [redacted] per wo#4149, NRI 02 Monitored under propofol ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Additional 0.60mL Ket 1M given during procedure.	[redacted]
					SO_2: serous discharge out of opening on caudal end of incision, expressed discharge & flushed thoroughly w/ chlorhexidine. opening ~3mm, suture sticking out of caudal aspect of incision, removed. obtained culture swab of discharge from opening.	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/31/18		F	G	N	SO: BAR (P) OPM: Resection cranial implant.	
					Very active. Implant CDI, margins	
					WNL, no crusting or picking mild	
					swelling at dorsal aspect of incision.	[redacted]
1/1/19		G	G	N	SO: BAR OPM: Resection Cranial implant.	
					Cranial implant CDI w/mild swelling	
					at medial aspect of head incision C+O	
					no dle or bleeding. Moving WNL.	
					NEPD.	[redacted]
					A: Stable cranial implant. swelling most	
					likely scar tissue.	
					P: CTM on OPM Daily	[redacted]
1/2/19		G	G	N	SO: BAR OPM: Resection Cranial implant:	
					Head implant: CDI, Margins C+O, WNL,	
					no crusting. Head incision CDI w/	
					mild swelling and scabbing at medial	
					aspect of incision no picking. NEPD	[redacted]
1/3/19	MMU [redacted]	0.7 CC KET/ D→ SURGERY			W/O 4082 NRL02	
WT: 6.76	CAGE TIME 8:45	15MIN 2	30MIN 3	45MIN	1HR 1.25HR 1.5HR 1.75HR 2HR	[redacted]
1/3/19					SO: Rec'd in [redacted] per wo# 4082, NRL02 Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery — Additional 0.20mL Ket IM given during procedure.	
						[redacted]
					SO2: incision CDI, suture sticking out @ caudal	
					end of incision, removed, scab and	
					thickened skin, no swelling noted.	[redacted]
1/3/19		WM	9	CC	SO: BAR OPM: cran implant resection. Incision + implant	
					CDI, no picking/scratching evident. NEPD A+P: see 1/1/19 entry	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/20/18	cont.				Margins C+D.	
					A: Cranial implant infection slow healing	
					P: Auxiliary implant cleaning and	
					recordings ~12/27 and 1/3	
					Vis ✓ daily on OPM, extend Rx	
					Cephalexin per DVM	[redacted]
12/27/18	MMU [redacted] / 0.7 CC KET / D→ SURGERY , W/O 3979 NRL02					
	WT: 6.67					[redacted]
	CAGE TIME 8:45 15MIN___ 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___					
12/27/18					SO: Rec'd in [redacted] per wo# 3979, NRL02 Additional 0.6 cc KET	
					Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. IM given during recordings	
						[redacted]
					SO: incision from repair on 12/20 CDI, small	
					scab & very mild erythema at caudal end	
					of incision near connector. Scabbing on	
					rest of repair, healing well.	[redacted]
12/28/18		F	G	N	SO: PAR (P), OPM: Resection cranial	
					implant: CDI, margins WNL, C+D	
					no crusting or scabbing. Healing	
					CDI w/ mild scabbing and mild swelling	
					ext medial aspect of cranial incision.	[redacted]
12/29/18		G	G	N	SO: BAR (P) OPM: cranial implant resection; Noted	
					incision CDI w/ small amount dried blood, no erythema	
					seen, very mild swelling. Implant CDI w/ no d/c seen	
					@ margins. Noted mild 1cm abrasion @ (L) brow, no	
					broken skin, N&PD.	[redacted]
12/30/18		G	G	N	SO: BAR, OPM: cranial implant resect; No apparent	
					changes from 12/29 observation. Implant CDI, N&PD.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/20/18					Skin over pillbox where the prongs were cut of the edges were sharp. P. √ incision daily. Ketoprofen x3d combiderm x2d cefadroxil x7d Monitor on OP Animal may have wk redness.	[redacted]
[redacted]					Admit ⊗ Prob. Sheet ⊗	[redacted]
					When ready to d/c, discuss w/ project vet	[redacted]
12/20/18 MMU [redacted] 0.7 CC KET / D→ SURGERY W/O 3939 NRL02 WT: 6.88 CAGE TIME 10:50 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						[redacted]
12/21/18		F	G	N	SO: BAR, OPM: Cranial implant Inf. Implant: CDI scabbing noted at margins. NEPD.	[redacted]
12/22/18		G	G	N	SO: BAR OPM: Cranial Imp. inf. Active + moving well. Implant appears CDI w/ scab @ margin of incision. Incision CDI.	[redacted]
12/23/18		G	G	N	SO: BAR OPM: cranial implant inf, Implant CDI, inc. CDI, scabbed. No moisture or rubbing/scratching noted. NEPD, animal active.	[redacted]
12/24/18		G	G	N	SO: BAR OPM: cranial implant inf.; Inc. CDI w/ mild scabbing, no scratching observed. NEPD.	[redacted]
12/25/18		G	G	N	SO: BAR OPM: cranial implant infection; Inc. + implant CDI w/ mild scabbing @ both NEPD.	[redacted]
12/26/18		G	G	N	SO: BAR, OPM: Cranial Implant INF. Head inc: CDI, +mild thickening at medial aspect of incision. Implant CDI, w/no scabbing or d/c	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/13/18					MMU [redacted] 0.7 CC KET ~> SURGERY W/O 3795 NRL02	
WT: 6.82						
CAGE TIME____15MIN____30MIN____45MIN____1HR____1.25HR____1.5HR____1.75HR____2HR____						[redacted]
12/13/18					SO: Rec'd in [redacted] per wo# 3795 NRL02 Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Add'l 0.4mL Ket IM given.	[redacted]
					SO2: Lesion ~~rostral~~ ① cranial to implant (~0.3cm) with metal from implant exposed. Cleaned with chlorhexidine scrub, small amt of serous exudate. Shaved, cleaned again and applied TAO.	[redacted]
12/20/18	6.88				0.7cc Ketamine → Surgery W/O 3939 NRL02	[redacted]
12/20/18					SO: Rec'd in [redacted] per wo# 3939 NRL02 Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Additional 0.100mL of Ketamine IM given during recordings.	
						[redacted]
					Resected eroded areas of skin. Flushed w/ copious amts of BNS then a final flush w/ Cefazolin in saline. Placed a sheet of tyrx porcine material over the implant then gelfoam. Closed in 2 layers 1st layer using 4.0 PDS of skin using 3.0 vicryl (intradermal) continuous pattern. Placed a simple interrupted suture @ the end of (each side) the incision for securing A. Closed/eroded resect	

Animal ID# [redacted]

MMU [redacted]			F
6yrs 9mos	6.98kg		NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 35 mg Total Dose

0.35 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-20-2018 — End 12-22-2018
first dose given 12/20

[redacted] C-115668 Ins20DEC@10:21 Prn20DEC@10:21

MMU [redacted]			F
6yrs 9mos	6.98kg		NRL02

Simbadol (Buprenorp
0.24 mg/kg Dose — 1.7 mg Total Dose

0.90 mLs Volume — SC Rte — EOD Freq — 2 Days
Start 12-20-2018 — End 12-21-2018
first dose given 12/20

[redacted] C-115669 Ins20DEC@10:21 Prn20DEC@10:21

ORE-[redacted] 12/13/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

MMU [redacted]
Animal ID#

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/29/18	MMU [redacted] 0.7 CC KET IM, ~> SURGERY / W/O 3595 NRL02				MONITORED UNTIL RECOVERED	
WT: 698						[redacted]
11/29/18					SO: Rec'd for neuro recordings, w O# 3595 NRL02.	
					cleaned implant w/ chlorhex. scrub. Edges of	
					implant CDI, mild erythema. Red scab	
					nostrae to implant noted. 0.5mL of Ado. Ket IM	
					given during recordings. Returned to h/c.	[redacted]
① 6/29/18		F	G	+	SO: BAR (P), OPM. Cranial implant. Implant	
					CDI margins CTD, no freshening, no	
					picking.	
					A: Stable cranial implant	
					P: Vis x daily on OPM	[redacted]
12/4/18	MMU [redacted] 0.7 CC KET IM /D->SURGERY				W/O 3696 NRL02	
WT: 690						[redacted]
CAGE TIME 2:45 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						
12/4/18					SO: Rec'd in [redacted] per wo# 3696, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery	
						[redacted]
12/4/18					SO: Noted scab ~1.5 cm cranial to connector	
					where corner of the pill box is trying to	
		3-4 mm			erode thru. Skin around connector is	
					healing very well	[redacted]
					SO: gently cleaned with DNS and q tips, small amount	
					of serous exudate, skin appears thin	[redacted]
② ~~12/12/18~~					S/O: Multiple animals in room reported for bloody nose/nasal d/c. A: Bloody noses throughout room. P: Per DVM treat room w/single dose of CCPA. Reassess room ~1wk after treatment for continued signs. May not record all MH reports. See Vitals for details.	

DLE [redacted] 11/29/18 ② R.E. [redacted] 12-12-109 ③ RE [redacted] 12/20/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

[redacted] 1/16/17

CALIFORNIA NATIONAL PRIMATE RESEARCH CENTER

ANIMAL DEATH RECORD

Species: MMU

ID #: [redacted]

Date of Death: 1/16/19

Date Reported: 1/16/19

Present Location: [redacted]

Weight: 6.90

Sex: F

Pentobarbital Administered:

2.5 mls IV

[redacted] Initials

Type of Death:

D ☐ Spontaneous Death

X ☒ Experimental Design

A ☐ Experimental Accident

M ☐ Medical Cull Diagnostic

K ☐ Medical Cull

S ☐ Surgical Cull

[redacted]

Probable Cause of Death (technician or clinician): OD Pentobarb

Signed [redacted]

Pathological Diagnosis (clinician or pathologist): NRL 02 Expt Tissue collection

☐ Necropsy not performed

Signed [redacted]

D1010 (3/13)M

Original – Animal Chart Yellow – Data Entry

Final Necropsy Report

Animal ID	MMU [redacted]	**Report ID**	66624	**Report Complete**	15-MAR-19
Sex	F	**Death Type**	X	**Location**	[redacted]
Age	6 yrs 10 mon	**Weight (KG)**	6.9	**Work Performed**	16-JAN-19
Investigator	[redacted]	**Project**	NRL02	**Time Performed**	12:00 AM
Pathologist	[redacted]	**Clinician**		**Charge ID**	BZ59
Resident	[redacted]	**Hydration**		**Pathology Condition**	

Gross Observations BODY AS A WHOLE No gross lesions

Gross Diagnosis 1 BODY AS A WHOLE NO REMARKABLE FINDINGS

Gross Comments Tisues were harvest as per NRL02. Hitopathology will be processed

Final Observations

BONE	Calvarium adjacent to implant site: New woven bone was laid ontop of lamellar bone and there was mild multifocal osteoclastic resorption. Some of the marrow spaces contained loose fibrous connective tissue.
GASTROINTESTINAL TRACT	No significant lesions (NSL) slides 6 - 11
HEART	NSL slides 13 & 14
KIDNEY	NSL slides 4 & 5
LIVER & DRAINED GB	NSL slide 2
LUNG	NSL slide 1
PANCREAS	NSL slide 7
SPINAL CORD	Cervical spinal cord: NSL slide 12
SPLEEN	NSL slide 3

Final Diagnosis 1 BODY AS A WHOLE NO REMARKABLE FINDINGS

Final Comments There were no significant lesions in the tissues examined. Sections of the gastrointestinal tract had mild to moderate autolysis which was consistent with a prolonged post mortem interval. There was no evidence of inflammation or infection in the sections of the skull examined.

DEAD

☐ VIRAL PRECAUTION 61

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

B259, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

MMU [redacted]
ANIMAL I.D.

01 / 11 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F SEX 6 YR 10 MO AGE 7 KG WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
head implant d/c

HOSPITALIZED NO ☒ YES ☐

PRIOR THERAPY ☐ NO ☒ YES
LIST ALL AGENTS:
cephalexin

SOURCE OF SPECIMEN(S) head implant

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 4/14 1+ STAPH coagulase positive
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S	S		S		S

REPORTED BY: [redacted]

REPORT DATE: 1/15/19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMY [redacted] Home Room [redacted] Date: 1/20/18
Wt (kg): 6.6 Age: 6.8m Sex: M/F Procedure: Sed. Recovery w/ [illegible] ET Tube size: 5.0
Investigator: [redacted] W/O# 3513 Project# [illegible] IV Catheter Placement: L cph

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
	Ø						
					Ø		

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP –

Time:	200	211	220	224	231	240
Temp:						
160						
150						
140	•					
135					•	
130				•		
125			•			•
120		•				
115						
110						
105						
100	✓	✓	✓	✓	✓	✓
95						
90						
85						
80						
75						
70						
65						
60						
55						
50	x	x	x	x	x	x
45						
40						
35						
30						
25	O		O	O	O	O
20		O				
15						
10						
SIGH	S	S	S	S	S	S
Fluids total/rate	MA			①	②	
Propofol CRI:	1.4/3	1.8/1.5	1/1.5	1.1/2.5	1.4/3	1.8/3
Iso FI (%)/ Oxygen (L)	0/2	0/2	0/2	0/2	0/2	0/2

Complete

① gave 0.5mL bolus, ↑ propofol to 2.5mg/kg 1/20/18
② gave 1.0mL bolus, ↑ propofol to 3mg/kg [redacted] 1/20/18

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initial [redacted]

Post Operative monitoring record

Date: 10/10/18 Animal# [redacted] Procedure: Cranial Implant

		Date	Date	Date	Date	Date	Date	Date
General Obervations		10/11/18	10/12/18	10/13/18	10/14/18	10/15/18	10/16/18	10/17/18
Appetite		P	G	G	G	G	G	G
Hydration		G	G	G	G	G	G	G
Stool		G	G	G	G	G	G	G
Incision		A	A	N(scant)	N(scant)	N	N	N
		CDI	CDI	CDI	CDI	CDI	CDI	CDI
	Score							
Physiologic parameters							[redacted]	
Pupils								
Normal	0	0	0	0	0			
Dilated	2							
Respiratory Rate								
Eupenic	0	0	0	0	0			
Tachypnea	2							
Mucous membranes								
Pink	0	0	0	0	0			
Pale	2							
Posture								
Sitting/standing upright	0	0	0	0	0			
Hunched posture	1							
Head between knees	2							
Sitting, legs extended	2							
Recumbent	3							
Fetal position	3							
Activity								
Moving normally in cage	0	0	0	0	0			
Attention to wound	1							
Guarding wound	2							
Restless/pacing	2							
Lack of interest in environment	2							
Shivering/teeth grinding	3							
Immobile	3							
Ataxia, uncoordinated movement	3							
Vocalization								
Vocalizes when stimulated	0							
Lack of vocalization	0	0	0	0	0			
Loud vocalization	3							
High pitched vocalization	3							
Post-operative Score		0	0	0	0			
Initials:		[redacted]						

revised 7/2017

4946

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

B259, NRL02
I.D. PROJECT CODE

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

10, 10, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 6 YR 7 MO 6.7 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

pre - SX

HOSPITALIZED ☒ NO ☐ YES [redacted]
ROOM CAGE

PRIOR THERAPY ☒ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	10.0	X 10 ^3/ µl
RBC	5.07	X 10 ^6/ µl
HEMOGLOBIN	11.6	gm/dl
HEMATOCRIT	36.3	%
MCV	72	fl
MCH	22.8	pg
MCHC	31.8	pg/fl
PLATELETS	3.36	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.7 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 10.0 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	68	6800
LYMPHOCYTES	29	2900
MONOCYTES	1	100
EOSINOPHILS	2	200
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

10/10/18 [redacted]

10/10/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 10/10/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2134

☐ VIRAL PRECAUTION

B259, NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

CLINICAL BIOCHEMISTRY

10, 10, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 6 YR 7 MO 6.7 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
PRE-SX

HOSPITALIZED NO☒ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☒ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☒ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX ____ SLOT ____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	146	mM/L	15		CPK (S,HP)	370	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	112	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	35	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	28	mM/L	18		LDH (S,HP)	782	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	14		19		CHOLESTEROL (S,HP)	120	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.2	mg/dl	20		TRIGLYCERIDE (S,HP)	62	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.0	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	16	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	52	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.9	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.0	g/dl										
13		ALT (S,HP)	13	U/L										
14		AST (S,HP)	25	U/L										

REPORTED BY [redacted] DATE 10/10/18

PERFORMED BY: CNPRC☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 10/10/2018

PROCEDURE: Cranial Implant – Unilateral (left side)	ROOM: [redacted]	AGE: 6Y 7M
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 3090	WT: 6.85 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070	P-Y8971	Left Recording Device Implantation
T-X2070	P-YY041	Left Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Left unilateral burr hole for 3K live electronics

Animal was prepared for surgery and brought into the operating room. Once sedated thoroughly on isoflurane, the animal's head was placed into stereotax. Head was prepped and drapped in the normal sterile fashion. A midline skin incision was made spanning approximately 3cm anterior to bregma and 7 cm posterior to bregma. The fascia was incised in the midline and the muscles were elevated laterally from the temporal ridge with the use of unipolar cautery. The muscles were then held down laterally with multiple scalp hooks. On the left side, a burr hole was made 15.2 mm lateral and 6.2 mm anterior to Bregma. The burr hole was enlarged with the side cutter. The dura was open to expose the brain and reflected anteriorly and slid into the epidural space. Hemostasis was obtained with thrombin gel foam. Implants were placed using an investigational robot. Electronics were attached to skull using titanium implant screws. The dura was reflected back over the brain and gel foam was used to cover the burr hole. A burr hole cover was secured. The port was then secured in place with titanium screws. A 2 cm incision was made over the port and the port was slid through without issues. The incision was closed with interrupted 3-0 vicryl galeal sutures and the skin was closed with a 4-0 monocryl subcuticular stitch. The animal was hooked up to electrophysiology hardware to ensure the implanted electronics were satisfactory. The animal was slowly weaned off of isoflurane. The animal as removed from the stereotax. Electrophysiology was continuously monitored. The animal was disconnected from the electronic and recovered.

Estimated blood loss: 5 ml

	POST OPERATIVE CARE:	
TIME IN: 9:07am TIME OUT: 1:02pm	Hydromorphone TID Q4h x3d Buprenex SID PM dose only x3d Famotidine SID x5d Cerenia SID x3d	Dexmethasone SID x7d Levetiracetam BIC x 7d Supplements x 5d

SURGEON: [redacted] / ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart | *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 1 of*

Animal: NNU[redacted] **Home Room:** [redacted] **Date:** 10/10/18 **Age:** Very Young **Sex:** M (F) **Wt. (Kg)** 6.85

Procedure: Neuro Sx - Implant **ET Tube Size:** 5.0 **Investigator:** [redacted] **W/O#:** 3090 **Project/ID:** NRL02 / B2559

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – ▼ Dias – ▲

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Oxymethazole	0.34 mo	IM	8:25	Cefazolin	0.52 ml	IM	9, 11:15, 1:22
Keppra 2mg, 30 mg/kg		PO	8:25	Atropine	0.65 ml	IM	10:15
				Hydromorphone	0.10 mL	IM	12:48

Del: 8:20 Sx Table: 8:30 Prep: 8:40 Start: 9:00 Cut: 9:07 Proc: 10:00 - 12:39 Close: 12:43 - 1:02 Full Recovery: 2:45

Time	8:38	9:59	10:09	10:25	10:42	10:54	10:57	10:27	10:40	10:53	11:12	11:26	11:43	11:58	12:10	12:27	12:42	12:57	1:12	1:27	1:45
Temp	97.8	96.7	96.0	95.7	95	94.8	95	95.5	96.3	97.3	98.5	99.4	99.7	99.7	99.7	99.7	99.8	99.9	100.0	99.8	—
Sigh																					
Fluids: LRS Total/Rate	14 / 68	33 / 68	46 / 68	67 / 68	85 / 68	102 / 68	121 / 68	136 / 68	150 / 68	166 / 68	187 / 68	205 / 68	222 / 68	240 / 68	253 / 68	272 / 68	288 / 68	300 / 68	324 / 68	341 / 68	356 / 68
CRI: Fentanyl Total/Rate	1.4 / 6.8	3.3 / 6.8	4.9 / 6.8	6.6 / 6.8	8.4 / 6.8	10.1 / 6.8	12 / 6.8	13.6 / 6.8	14.9 / 6.8	16.6 / 6.8	18.6 / 6.8	20.1 / 6.8	22.2 / 6.8	23.9 / 6.8	25.2 / 6.8	27.2 / 6.8	28.8 / 6.8	30.0 / 6.8	32.4 / 6.8	34.1 / 6.8	35.6 / 6.8
Iso FI (%) / O^2 (L)	1.5 / 1.5	2.2 / 1.5	1.8 / 1.5	1.7 / 1.5	1.6 / 1.5	1.0 / 1.5	0.97 / 1.5	1.2 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	1.1 / 1.5	0.92 / 1.5	0.63 / 1.5

Fumotidine 0.34mL IM @ 1:00pm
Enrofloxacin 0.30mL IM @ 1:00pm
Cerenia 0.68mL SQ @ 1:15pm

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) *Initial* [redacted] rev.7/15-PC15A

23-01594_000192

UCD 0155

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: UUU[redacted] Home Room [redacted] Date: 10/3/18
Wt (kg): 6.78 Age: 6yr Sex: M/F Procedure: Nail Skiper ET Tube size: 5mm
Investigator: [redacted] W/O# 3445 Project: NRCD2 IV Catheter Placement: Ø

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.7mls	IM	~12:30pm				
Ketoprofen	0.35mls	IM	~12:35p				

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR-**0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP —

Time:	12:30p	12:45
Temp:		
160		
150	•158	
140		•144
135		
130		
125		
120		
115		
110		
105		
100	✓	✓
95		
90		
85		
80		
75		
70		
65		
60		
55		
50		
45	X	X
40	Ø	
35		
30		Ø
25		
20		
15		
10		
SIGH		
Fluids total/rate	N/A	
CRI:	N/A	
Iso FI (%)/ Oxygen (L)	1.7% / 1.5L	1.7% / 1.5L

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL Initials: [redacted]

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
10/10/18		G	G	N	SO: BAR OPM: Diarrhea	[redacted]
10/16/18		G	G	N	SO: BAR OPM: Diarrhea, normal stool only and adequate amount. Tylosin ended 10/12, normal stool since. PBS ended 10/3.	
					A: Resolved diarrhea	
					P: DC from [redacted], CTM on MH	[redacted]
					D/C Snomed	
11/4/18		G	G	N SS	SO: BAR P.e. liquid stool; cage recently cleaned, small amount normal stool w/ very small amount semi-solid. NERD. A: 1st recent (unconfirmed) report of diarrhea.	
					P: CTM on routine MH.	[redacted]
4/2/18	10.00				BW	[redacted]
					✓pre-project physical __pre-shipment physical __weaning physical	
					See associated P.E. sheet for additional information.	[redacted]

1/10/19 MMU [redacted] LOCATION [redacted] / ___ MLS KET

WT: 10.00 1.0cc KET IM D-91310

CAGE TIME 2100 15MIN 30MIN 45MIN 1HR 1.25HR 1.5HR 1.75HR 2HR

1/15/19					Sed. w/ 1.0ml Ket IM Del 9 [redacted] WO# 4212 NRL02	[redacted]
1/15/19					SO. Prep in [redacted] prep WO# 4212 NRL02. Surgically prepped performed terminal procedure per protocol.	
					A: terminal surgical procedure	
					P: Del 9 [redacted] post procedure	[redacted]

MMU [redacted] M
9yrs 6mos 10.33kg NRL02

Famotidine 10 mg/mL
0.50 mg/kg Dose — 5.2 mg Total Dose
0.50 mLs Volume — IM Rte — SID Freq — 2 Days
Start 01-14-2019 — End 01-15-2019

Dose — mg Total Dose
1.00 mLs Volume — IM Rte — SID Freq — 2 Days
Start 01-14-2019 — End 01-15-2019

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

California National Primate Research Center: Anesthesia Monitoring Sheet Page 1 of

Animal: mmu [redacted] **Home Room:** [redacted] **Date:** 1/15/19 **Age:** 9y6m **Sex:** (M) / F **Wt. (Kg)** 10.33

Procedure: cranial implant (terminal) **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** 4212 **Project/ID:** NRL02/BZ59

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Keppra 0.5 mL/kg @ 807

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Atropine	1.0 mL	IM	805	Atropine	1.0 mL	IV	1031
Famotidine	0.50 mL	IM	807				
Dexamethasone	1.0 mL	IM	807				

1170m

Del: 805 Sx Table: 825 Prep: 840 Start: 846 Cut: 849 Proc: 1003 - 201 Close: 204 - 231 Full Recovery: N/A

Time	840	850	900	915	930	945	1000	1015	1030	1045	100	115	1130	1145	1200	1215	1232	1254	110	130	145	200	215	230
Temp	100.5	99.4	99.0	98.5	98.2	98.2	98.0	97.9	97.7	97.5	97.5	98.2	99.0	99.6	99.4	99.6	99.5	99.4	99.2	99.0	98.4	98.5	98.3	98.2

Completed

Fluids: LRS Total/Rate	8/100	25/100	41/100	66/100	89/100	114/100	140/100	165/100	188/100	214/100	238/100	263/100	288/100	314/100	338/100	363/100	395/100	430/100	453/100	490/100	512/100	538/100	564/100	585/100
CRI: Propofol Total/Rate	1.87/10	2.5/10	4.1/10	6.6/10	8.9/10	11.4/10	14.0/10	16.5/10	18.8/10	21.4/10	23.8/10	26.3/10	28.8/10	31.4/10	33.8/10	36.3/10	38.8/7	41.3/7	43.2/7	45.5/7	49.4/7	13 @ 1170m		
Iso FI (%) / O²(L)	1.5/2	1.5/2	1.5/2	1.4/2	1.4/2	1.4/2	1.2/2	1.2/2	1.2/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.6/2	1.6/2	1.6/2

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) *Initial* [redacted] rev.7/15-PC15A

194

DEAD

BZ59 ~~BZ20~~, NRLØ2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

1 / 10 / 19
DATE OF SAMPLE

M SEX | 9 YR 5 MO AGE | 10.00 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	8.2	X 10 ^3/ µl
RBC	5.09	X 10 ^6/ µl
HEMOGLOBIN	12.1	gm/dl
HEMATOCRIT	37.8	%
MCV	74	fl
MCH	23.8	pg
MCHC	32.1	pg/fl
PLATELETS	4.01	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.0 gm/dl

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 8.2 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	53	4346
LYMPHOCYTES	32	2624
MONOCYTES	10	820
EOSINOPHILS	5	410
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

1/10/19 [redacted]

1/10/19 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 1-10-19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

75

DEAD

☐ VIRAL PRECAUTION

BZ59, NRW2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

? MMM[redacted]
ANIMAL I.D.

1, 10, 19
DATE OF SAMPLE

M 9 YR 5 MO 10.00 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ ____-____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X
HEMOLYZED ☐
ICTERIC ☐
LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	354	U/L	25		pH		
2		POTASSIUM (S,HP)	3.8	mM/L	16		ALK PHOS (S,HP)	79	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	109	mM/L	17		GGT (S,HP)	42	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	27	mM/L	18		LDH (S,HP)	199	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	13		19		CHOLESTEROL (S,HP)	104	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.1	mg/dl	20		TRIGLYCERIDE (S,HP)	64	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	10.2	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	36	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.2	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	75	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.9	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.4	g/dl										
13		ALT (S,HP)	17	U/L										
14		AST (S,HP)	18	U/L										

REPORTED BY [redacted] DATE: 1/10/19

PERFORMED BY: CNPRC ☐ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

DEAD

Physical Exam Certificate
California National Primate Research Center

Animal number: MNM [redacted] Location: [redacted] Date of exam: 1/10/19

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: Terminal NRL Subject

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 10.08 Temp: 100.3 HR: 126 RR: 30 BCS: 2.0 Gender: (M) F Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	NAO	(A)	NE	Mild-Mod atrophy (L) leg, tibial plate
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 1/10/19 Dates Reviewed: All Reviewers initials: [redacted]

Comments: 2017 (L) tibia fx, plate fixation; Chronic, intermittent diarrhea, historic trauma

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 1/10/19 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC (1.10.19): WBC = 8.2x10³/ul, Hct = 37.8%, PT = 7.0 mg/dl, fibrinogen = 400 mg/dl ⇒ WNL

Chem 20 (1.10.19): WNL

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

- ___ Approved for project
- ✓ Approved for project pending lab review
- ___ Approved for shipment
- ___ Stable weanling
- ___ Other

Comments:

Examining Veterinarian: [redacted] Date: 1/10/19

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

Animal ID# [redacted]

California National Primate Research Center

Page # 28

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/30/19					MMU [redacted] 1.3 CC KET/ D->1302 W/O 2170 SPF01	[redacted]
WT: 12.86	CAGE TIME 2:40	15MIN 2	30MIN 3	45MIN 1HR 1.25HR 1.5HR 1.75HR 2HR		
8/19/19					MMU [redacted] 1.3 MLS KET / D→ SURGERY W/O 2487 NRL03	
WT: 12.34	CAGE TIME:					
8/19/19					SO: Rec'd in [redacted] prep wo# 2487, project NRL03 Surgically prepped, performed Cranial implant See anesthesia log & surgery report. Recovered, returned to home cage. A:Terminal Cranial Implant procedure P: Del to [redacted] post procedure	[redacted]
					✓ Charges ✓ Surgery Log ✓ Anesthesia Log ✓ Surgery Report	[redacted]
						[redacted]

MMU [redacted] M
7yrs 2mos 12.86kg NRL03

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 9.7 mg Total Dose
1.00 mLs Volume — IM Rte, SID Freq, 2 Days
Start 08-18-2019 End 08-19-2019
8/19 GIVE at 6am

14.00 mg/kg Dose — 180 mg Total Dose
1.80 mLs Volume — PO Rte, BID Freq, 2 Days
Start 08-18-2019 End 08-19-2019
Dose Ovrd | 8/19 GIVE at 6am

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/3/18					CT SCAN NRL ☒	[redacted]
10/3/18 WT:	MMU [redacted] / 0.74 MLS TELAZOL IM, D → SS2007/CT SCAN 3040 NRL02				CAGE TIME 10:10 15MIN / 30MIN / 45MIN / 1HR / 1.25HR / 1.5HR 2 1.75HR 3 2HR	[redacted]
10/3/18					Culture results from 9/27 gingival	
					sample show mixed growth. suspect	
					etiology was shigella even though	
					it was not identified due to appearance	
					and response to tx, gingivitis resolved	[redacted]
10/22/18					moved from [redacted] → [redacted], move #18-592	
12/26/18	10.07				Box WT	
2/28/19 WT: 10.18					1.2 MLS KETMINE IM, BLED ____ MLS, ROOM ROUND UP TB TEST LEFT EYE 24HR / 48HR / 72HR / ANIMAL MONITORED UNTIL RECOVERED	[redacted]
3/20/19		G	G	N	SO: BAR (P) PE: (B) arm rash; Noted mild erythema @ (B)	
					arm. No broken skin, NAPD. No excoriations	
					A: mild erythema @ (B) arm. No tx @ this time.	
					P: ctm on routine MH.	
4/2/19	10.68				[illegible]	[redacted]
6-25-19	12-11				Box wt. D ✓	
7/30/19					**Cardiologist guided echocardiogram performed due to: pre-shipment / pre-project / clinical / genetic**	
					Blood pressure and heart rate readings obtained	
					Preliminary results: Normal / Suspect (await final results)	
					Comment:_____	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/28/18		G	G	N	SO: BAR, OPM. Shigella Gingivitis.	
					Animal has moderate erythema at	
					207 and 204. NEPD.	
					A/P: See 9/27 per DVM.	
					SO2: Sedated w/0.5 ml ketamine IM	
					and 0.25 dexmed/Atip IM. Flushed	
					and scaled dried w/ dry gauze.	
					A/P: See 9/27	
					Cage Time 1:00 AM / PM	
					15 min 3 30 min___ 45 min___ 1 hr___	
					1.25 hr___ 1.5 hr___ 1.75 hr___ 2 hr___	
					1 recumbent, 2 movement, 3 sitting up	
						[redacted]
10/1/18	9.00				BOX AND LOAD INTO TRUCK	[redacted]
					SO: Transported to [redacted] for MRI, project NRL02 WO# 3014. Sedated with ketamine 1.0 mls, Animal was / was not placed in Stereotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal did/did not receive Ketoprofen or Buprenex IM	Flushed gingiva w/ ~25 mls DNS. appears resolved.
						[redacted]
					10/1/18 MMU [redacted] BOX / LOAD INTO TRANSPORT TRUCK, NRL02 W.O. 3014	
					WT: 9.00 CAGE TIME_____15MIN___30MIN___45MIN___1HR___1.25HR___1.5HR___1.75HR___2HR___	
					SO2: Shigella gingivitis	
					A: Resolved Shigella gingivitis	
					P: D/C from OPM, CTM on OPM	
					[redacted]	
					☒ D/C ☒ Snomed	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

1510 – 1516

☐ VIRAL PRECAUTION

B259, NRLØ3
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

[redacted]
ANIMAL I.D.

8 / 19 / 19
DATE OF SAMPLE

ANIMAL DATA: _____ - _____
ROOM CAGE

nx

M SEX ____ YR ____ MO ____ KG
AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA

HOSPITALIZED NO X YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) ① left skull, ② Right skull ③ above pill box, ④ posterior, ⑤ anterior ⑥ lateral ⑦ medial

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
X AEROBIC 1,2,3,5,6		✓✓✓✓✓
X ANAEROBIC 1,2,3,4,5,6,7		✓✓✓✓✓✓✓
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. Aerobic - Posterior: 1 colony Staph coagulase negative
2. Medial: Isolated from thio broth - Staph coagulase negative
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 8-27-19

CLINICAL MICROBIOLOGY

2/2014

MMLC [redacted] *ornia National Primat* [redacted] *enter: Anesthesia Monitoring Sheet* Page 1 of ___

Anima[redacted] Home Room: [redacted] Date: 8/19/19 Age: 7y 2m Sex: (M) / F Wt. (Kg) 12.86

Procedure: cranial implant ET Tube Size: 6.0 Investigator [redacted] W/O#: 2487 Project/ID: NRL03

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
Atropine	1.2ml	IM	8016	Cefazolin	0.97	IV	921				
Reglan (1)				Reglan	0.7ml	IV	830				
				atropine	1.3ml	IM	11:20				
				Glycolin	0.97	IV	12:28				

Del: 805 Sx Table: 815 Prep: 850 Start: 900 Cut: 920 Proc: 1045-135 Close: 145 - 227 Recovery NA

Time	904	917	934	952	1006	1037	1051	1105	1120	1130	1150	1200	1217	1225	1240	1255	130	1320	1339	1345	1400	1412		
Temp	99.7	98.7	98.5	98.0	97.9	97.5	97.7	97.7	97.7	97.5	97.4	97.4	97.3	97.2	97.7	98.1	98.7	99.1	99.4	99.4	99.4	99.3		
160																								
150																								
140																								
130																								
120	•	•	•																					
110																								
100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
90																								
80	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼		
70	▼	▼																						
60			—	—						—	—	—	—	—	—	—	—	—						
55							—	—											—	—				
50	—	—			—	—															—	—		
45																								
40			▲	▲						▲	▲	▲	▲			▲	▲	▲	▲	▲	▲	▲		
35	▲	▲	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
30	X																							
25						▲																		
20																								
15																								
10	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø		
5																								
Sigh																								
Fluids: LR (Total/Rate)	78 / 125	104 / 125	130 / 125	178 / 125	201 / 125	227 / 125	250 / 125	330 / 125	301 / 125	400 / 125	421 / 125	453.3 / 125	461 / 125	498.5 / 125	532.3 / 125	556 / 125	591.5 / 125	642.8 / 125	675.3 / 125	695.3 / 125	693.3 / 125	722.3 / 125		
CRI: Sevoflurane (Total/Rate)	6.9 / 12	9.4 / 12	13 / 12.8	16.9 / 12.8	19.3 / 12.8	26.6 / 12.8	27.5 / 12.8	32.6 / 12.8	35.3 / 12.8	39.1 / 12.8	41.5 / 12.8	45.54 / 12.8	48 / 12.8	49.93 / 12.8	52.84 / 12.8	58.3 / 12.8	59.33 / 12.8	56.11 / 12.8	64.11 / 12.8	65.64 / 12.8	62.5 / 12.8	72.5 / 12.8	73.3 / 12.8	69 / 12.8
Iso FI (%) / Oxygen (L)	2.2 / 2	1.6 / 2	1.6 / 2	1.3 / 2	1.3 / 2	1.3 / 2	1.2 / 2	1.1 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2	1.2 / 2.0	1.25 / 2.0	1.4 / 2		

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy) Initia[redacted] rev.6/19-PC15A

(1) RE wrong lic [redacted] 8/19/19 (2)

UCD 0166

23-01594_000203

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL03	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 08/19/2019

PROCEDURE: Cranial Implant (TERMINAL)	ROOM: [redacted]	AGE: 7y 2m
INVESTIGATOR:	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 2487	WT: 12.86 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure
T-00010	P-D5705	WB Euthanasia

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Cranial heat dissipation study

Animal was prepared for surgery and brought into the operating room. Once sedated thoroughly on isoflurane, the animal's head was placed into stereotax. Head was prepped. A midline skin incision was made spanning approximately 2cm anterior to bregma and 6 cm posterior to bregma. The fascia was incised in the midline and the muscles were elevated laterally from the temporal ridge with the use of unipolar cautery. The muscles were then sutured down laterally with multiple 2-0 Vicryl sutures. Starting on the right side, a burr hole was made 15 mm lateral to bregma with the most anterior portion of the burr hole at that point. The burr hole was enlarged with side cutter. The dura was excised to expose the brain. On the left, a second burr hole was made 18 mm lateral to bregma with most anterior portion of the burr hole 5 mm posterior from bregma. The dura was excised to expose the brain. Implants were placed using investigational robot. Electronics were attached to skull using titanium implant screws. Cranial sealants were used to seal burr holes. Temperature probes were placed in various locations relative to the burr holes and tunnel posteriorly out of the incision. The electronic wires were tunneled posteriorly on the left side out of the incision. The incision was closed in multiple layers using 2-0 and 3-0 vicryl sutures. The animal was hooked up to electrophysiology hardware to ensure the implanted electronics were satisfactory. The animal was switched off of isoflurane and place on a propofol continuous drip. The animal as removed from the stereotax. Electrophysiology and temperature readings was continuously monitored. Functional sensation testing was performed. The animal was disconnected from the electronic and euthanized.

Estimated blood loss: 5 ml

TIME IN: 9:20am TIME OUT: 2:27pm	POST OPERATIVE CARE: N/A

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

1677

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

8723 / CRX01
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

MMM [redacted]
ANIMAL I.D.

9 / 27 / 18
DATE OF SAMPLE

M SEX | 6 YR 4 MO AGE | 8.53 KG WEIGHT

PROCEDURE IS: ✗ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: Focal gingivitis.
☐ DIARRHEA

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S)

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☑ AEROBIC		
☑ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. Aerobic: 4+ mixed oral flora
2. ANaerobic: 4+ mixed growth including Bacteroides sp.
3. And Fusobacterium nucleatum
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 10-2-18

CLINICAL MICROBIOLOGY

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 9/27/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL01

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 9.24 Temp: 99.7 HR: 172 RR: 30 BCS: 2.0 Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	2007 - suspect Shigella gingivitis
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	multiple digit tips amputated
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 9/27/18 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Diarrhea in first year of life (1 case shigella); multiple minor trauma, resolved; vasectomized in 2015

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/27/18 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: WNL

Imaging studies: (to be completed by Veterinary staff)

Date: 5/15/18 Radiographs: U/S exam: Echo

Comments: (-) Bor LVH Reviewers initials [redacted]

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

✓ Approved for project
____ Approved for project pending lab review
____ Approved for shipment
____ Stable weanling
____ Other

Comments: Mild Ketamine reactor
Shigella gingivitis complete 10/1/18

Examining Veterinarian: [redacted] Date: 10/1/18 / 10/1/18

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

4742

BZ59 NRLQ2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

9 27 18
DATE OF SAMPLE

M 6 YR 4 MO 8.53 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

pre project PE

HOSPITALIZED ☐ NO ☐ YES ROOM - CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☑ Fasted ____ hrs ☑ Anethetized ☐ other ____

☑ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	9.9	X 10 ^3/ µl
RBC	5.41	X 10 ^6/ µl
HEMOGLOBIN	12.9	gm/dl
HEMATOCRIT	40.5	%
MCV	75	fl
MCH	23.9	pg
MCHC	31.8	pg/fl
PLATELETS	2.96	X 10 ^5/ µl

☐ RETICULOCYTES % X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 7.2 gm/dl

PLASMA COLOR:
- ☐ NO ABNORMALITIES
- ☒ HEMOLYZED SL
- ☐ ICTERIC
- ☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 9.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	33	3267
LYMPHOCYTES	58	5742
MONOCYTES	2	198
EOSINOPHILS	7	693
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
- ☒ ADEQUATE
- ☐ DECREASED ☐+1 ☐+2 ☐+3
- ☐ INCREASED ☐+1 ☐+2 ☐+3
- ☐ LARGE PLATELETS
- ☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
- ☒ ESSENTIALLY NORMAL
- ☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/27/18 [redacted]

9/27/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9-27-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

2046

☐ VIRAL PRECAUTION

B259, NR1Q2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

9, 27, 18
DATE OF SAMPLE

M 6 YR 4 MO 8.53 KG
SEX AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID _____ COLONY MANAGEMENT _____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre Project AE

HOSPITALIZED NO☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ _____ HOURS COMMENTS: _____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐ SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☑ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	146	mM/L	15		CPK (S,HP)	196	U/L	25		pH		
2		POTASSIUM (S,HP)	3.6	mM/L	16		ALK PHOS (S,HP)	118	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	110	mM/L	17		GGT (S,HP)	47	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	25	mM/L	18		LDH (S,HP)	155	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	202	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	5.1	mg/dl	20		TRIGLYCERIDE (S,HP)	54	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.3	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	18	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	63	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.7	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.1	g/dl										
13		ALT (S,HP)	22	U/L										
14		AST (S,HP)	18	U/L										

REPORTED BY [redacted] DATE: 9/27/18

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: HMU [redacted] Home Room: [redacted] Date: 10/1/18
Wt (kg): 9 kg Age: 1m 4m Sex: M/F Procedure: HRI Skyra ET Tube size: 6mm
Investigator: [redacted] W/O# 3014 Project: NR602 IV Catheter Placement: Ø

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	1.0mls	IM	8:41a				
Ketoprofen	0.45mls	IM	8:50a				

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP —

Time:	8:55	9:11
Temp:		
160		
150		
140	•	
135		
130		
125		
120		•
115		
110		
105		
100		
95	✓	✓
90		
85		
80		
75		
70		
65		
60		
55		
50		
45	X	X
40		
35		
30		
25		
20	O	O
15		
10		
SIGH		
Fluids total/rate	N/A	
CRI:	N/A	
Iso FI (%)/ Oxygen (L)	1.0% / 1L	1.1% / 1L

(Awake)

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

PC 15

Initials: [redacted]

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/2/18					MMU [redacted] 0.71 MLS TEL IM, D→CT, BLED 3 MLS W/O 1997/1998 NRL01	[redacted]
WT: 9.74					CAGE TIME 815 15MIN / 30MIN / 45MIN / 1HR / 1.2SHR / 1.5HR 2 1.75HR 2 2HR 3	
7/2/18		G	C	N	SO: BAR, Re: (D/P) leg red. unchanged	
					lesions.	
					A/P: See 7/2 per DVM await	
					NX date this week	[redacted]
7/5/18					MMU [redacted] / 1.0 CC KET IM, D→SURGERY W/O 2030 NRL01	
WT: 9.66						MR
7/5/18					SO: Rec'd in [redacted] prep WO# 2030	
					DRUPI. Surgically prepped	
					performed cardiac implant	
					per protocol see anesthesia log & sheets	
					A: Terminal procedure	
					P: Del → [redacted] post procedure.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/27/18					SO: BAR Re: Left side + Right side leg red. Confirmed	
					red pick lesions. ~6 on (L) shin + 1 on (R) shin	
					No erythema, no swelling: lesions approx 3mm	
					in diameter.	
					A: R + L leg pick lesions on shins.	
					P: Good short term project candidate,	
					CTM on MH, if swelling + erythema	
					develop, admit to OP	[redacted]
6/29/18		G	G	N	SO: BAR. RE: R + L leg red unchanged. Lesions on	
					L + R shin clean + dry, no Δ.	
					A: Stable pick lesions	
					P: CTM on MH, see 6/27/18 plan.	[redacted]
① 6/28/18		G	G	N	SO: BAR Re: R+L side leg red unΔd. lesions on R+L	
					leg appear CAD w/ scab present. A: Slow healing	
					lesions. P: CTM on OP + MH.	[redacted]
7/2/18					NRLØ2 CT SCAN ⊽	[redacted]

PHYSICAL EXAM

Date 7/2/18 Weight 2.5 BCS 9.74

HR 120 RR 18 TEMP 97.6

☐ Project Code

☑ Shave Tattoo

1. Integument Mult pick lesions 2-3mm on arms/legs
2. Oral Cavity WNL-PINK, CRT 1S
3. Eyes OK 4. Ears OK
5. Musculoskeletal WNL
6. Thorax Auscultation lungs clear
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital NBF
12. Rectal Palpation Ø

Preproject PE WNL
A: Sat for project
pending labs [redacted]

Animal may be unpaired or individually housed while receiving veterinary care

7/3/18 SO: CBC & Chem 20 (7/2) WNL
A: Sat for project (STP) [redacted]

① KF. 6/28/18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

3263

DEAD

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

B259, NRL01
I.D. PROJECT CODE

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

7 / 2 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M SEX | 5 YR 1 MO AGE | 8.88 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☒ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	6.4	X 10 ^3/ µl
RBC	5.89	X 10 ^6/ µl
HEMOGLOBIN	13.6	gm/dl
HEMATOCRIT	43.3	%
MCV	74	fl
MCH	23.0	pg
MCHC	31.3	pg/fl
PLATELETS	3.47	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 6.6 gm/dl

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 6.4 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	55	3520
LYMPHOCYTES	34	2176
MONOCYTES	4	256
EOSINOPHILS	7	448
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

7/2/18 [redacted]

REPORTED [redacted]

REPORT DATE: 7/2/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

1406

DEAD

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

☐ VIRAL PRECAUTION

BZ59, NRLØ1
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

[redacted]
ANIMAL I.D.

7, 2, 18
DATE OF SAMPLE

M 5 YR 1 MO 8.88 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	148	mM/L	15		CPK (S,HP)	374	U/L	25		pH		
2		POTASSIUM (S,HP)	3.9	mM/L	16		ALK PHOS (S,HP)	168	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	36	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	29	mM/L	18		LDH (S,HP)	243	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	125	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	7.8	mg/dl	20		TRIGLYCERIDE (S,HP)	40	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	10.1	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	16	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	82	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.4	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.0	g/dl										
13		ALT (S,HP)	19	U/L										
14		AST (S,HP)	24	U/L										

REPORTED BY [redacted] DATE: 7-2-18

PERFORMED BY: CNPRC ☑ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 7/5/18
PROCEDURE: Cranial Implant (TERMINAL)		ROOM: [redacted]	AGE: 5y 2m
INVESTIGATOR: [redacted]		CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]		W/0: 2030	WT: 9.74 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Cranial heat dissipation study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, animal's head placed into stereotax. Head sterile prepped. Skin incised in the midline approximately 1cm anterior to bregma and 4cm posterior to bregma. Fascia incised and muscle elevated from temporal ridge and retracted laterally. Just posterolateral to bregma bilaterally, 14mm burr holes were made, one on each side of midline. A second, partially overlapping burr hole was made on each side just anterior to the first to increase the size of the dural exposure. Exposed dura was resected. Implants were placed using investigational robot. Electronics were attached to skull using titanium implant screws. Cranial sealants were used to seal burr holes. Temperature probes were placed in various locations relative to the burr holes and tunneled out through a separate posterior titanium transcutaneous portal. The incisions were closed in a simple running fashion using 2-0 nylon monofilament. Temperature probes were monitored continuously until termination of procedure. Animal removed from stereotax and euthanized.

Estimated blood loss: minimal

TIME IN: 934 TIME OUT: 440	POST OPERATIVE CARE: N/A

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

MMU [redacted] California National Primate Research Center: Anesthesia Monitoring Sheet Page 1 of

Animal: [redacted] Home Room: [redacted] Date: 7/5/18 Age: 5yrs Sex: (M) F Wt. (Kg) 9.74

Procedure Cranial Implant ET Tube Size: 6.0 Investigator: [redacted] W/O#: 2030 Project/ID: NRL 101

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Atropine	0.9ml	IM	845	hydromorphone	0.15ml	IM	1243
Hydromorphone	0.15ml	IM	845	hydromorphone	0.15ml	IM	1636

Del: 845 Sx Table: 855 Prep: 911 Start: 915 Cut: 934 Proc: 1024 - 1640 Close: MA Full Recovery: MA

Time	900	911	935	945	1000	1022	1045	1106	1118	1149	1225	1233	1249	1302	1320	1347	1400	1416	1430	1445	1509	1530	1549	1608	1625
Temp	94.9	93.6	92.3	92.2	91.8	91.9	91.8	92.8	93.5	95.1	96.6	96.6	96.6	96.4	96.4	96.2	96.2	96.2	95.9	95.6	95.2	94.8	94.7	94.4	94.3
Fluids: LRS Total/Rate	0/94	14.5/94	50/94	63/94	99.3/94	134/94	171/94	202/94	222/94	270/94	327/94	340/94	364/94	384/94	415/94	435/94	474/94	500/94	533/94	547/94	581/94	626/94	645/94	675/94	703/94
CRI: MA Total/Rate																									
Iso FI (%) / O².(L)	1.5/1	1.4/1	1.4/1.5	1.4/1.5	1.3/1.2	1.1/1.2	1.0/1.5	1.0/1.5	1.0/1.5	.98/1.5	.98/1.5	.98/1.5	.97/1.5	.94/1.5	.93/1.5	.98/1.5	.98/1.5	.99/1.5	.99/1.5	.97/1.5	.99/1.5	1.0/1.5	.98/1.5	1.0/1.5	1.0/1.5

Sigh

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) Initials [redacted] rev.7/15-PC15A

23-01594_000215

UCD 0178

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU[redacted] Location: [redacted] Date of exam: 7/2/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: neuraline - terminal procedure

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 9.74 Temp: 97.6 HR: 120 RR: 18 BCS: 2.5 Gender: M/F Comments:

Integument	NAO	A	NE	multpic lesions - 2-3mm on lower legs
Oral Cavity	NAO	A	NE	mm-pink, CRT 1s
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: N/A Dates Reviewed: Reviewers initials:

Comments:

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 7/2 CBC ECC CHEM U/A R/C Parasitology Reviewers initials:

Comments: WNL

Imaging studies: (to be completed by Veterinary staff)

Date: N/A Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

✓ Approved for project Comments:

____ Approved for project pending lab review

____ Approved for shipment

____ Stable weanling

____ Other

Examining Veterinarian: [redacted] Date: 7/3/18

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/24/20	17.95				Box weight	[redacted]
8/21-20	17.59				[redacted] [redacted] 8/21/2020 ___mls Ket. BCS=4 Tartar: 0 1 2 3 4 Teeth Scaled Y N TB Test: R L Eye 17.59 kg 24hr____ 48hr____ 72hr____ alopecia w/ multi pin point lesions consistent w/ picking L shoulder L arm both less. Mild nuclear sclerosis ANIMAL MONITORED UNTIL RECOVERED	[redacted]
9/8/20		WW	N		SO: BAR Re: (B) arm trauma - conf. ~2 mm open wet lesion w/ surrounding area of alopecia consistent w/ pick lesion Behav. staff obs & is maintaining animal. (Animal seems to occ. "cycle" thru episode) No tx indicated P: CTM via MH & Behav. eval	[redacted]
9/28/20					__pre-project physical X pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]
9/28/20	17.28				MMU [redacted] [redacted] NRL03 WO 2814 1.8 ML KET / BLED 6 MLS / D → 1310 TB TEST (R) EYE – 24HR: — 48HR: — 72HR: — CAGE TIME: 2:35 15MIN 2, 30MIN 3, 45MIN____ 1HR____ 1.25HR____, 1.5HR____, 1.75HR____, 2HR____	
10/1/20					Animal shipped to Neuralink	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2-7-20	16.8				[redacted] [redacted] 2/21/2020	[redacted]
					1.9 mls Ket. BCS=____ Tartar: 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: R (L) Eye 24hr___ 48hr___ 72hr___	
					wt. 15.85	
					ANIMAL MONITORED UNTIL RECOVERED	
					PHYSICAL EXAM [redacted]	
2/21/20	15.85				Date 2-21-20 Weight 15.85 BCS 3.5	
					HR 130 RR 36 TEMP 98.8 ☐ Project Code	
					☑ Shave Tattoo	
					1. Integument WNL	
					2. Oral Cavity mild tartar; mild gingivitis	
					3. Eyes WNL 4. Ears WNL	
					5. Musculoskeletal WNL	
					6. Thorax Auscultation WNL	
					7. Abdominal Palpation WNL	
					8. Spleen WNL 9. Liver WNL	
					10. Lymph Nodes WNL	
					11. Urogenital (P) testicle 50% > (D).	
					12. Rectal Palpation N/A	[redacted]
					Animal may be unpaired or individually housed while receiving veterinary care	
3/6/20	16.4				Box Weight	[redacted]
5/1/20	17.65				Box Weight	[redacted]
5/29/20	18.00				Box Weight	[redacted]
6/23/20		G	G	N	SO: BAR Re: vomit animal care staff/NRL	
					staff said animal regurgitates	
					& plays w/ food in cheek pouches when	
					excited A: NO emesis obs P: CTM via MH	[redacted]
6/26/20	18.33				Box Weight	[redacted]
7/15/20		G	G	N	SO: BAR, Re: vomit; no vomit seen post cage hosing	
					readily ate treats, bright & interactive, MM pink A:	
					1st report for emesis in ~3 weeks, see 6/23/20 entry	
					P: CTM on routine MH	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 26

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/26/19		G	G	N	SO: BAR OPM: Buddy PBS - this animal has N stool (it has had) Buddy has (+) stool P: ✓ 1/WK while on OP w/ Buddy	[redacted]
12-27-19		G	G	N/L	SO BAR (P), OP: Buddy supp: Animal active - NEPD. Ate PBS. Normal and liquid stool in cages. Suspect pairmate is one with liquid stool.	[redacted]
12-27-19	15.4					
1/2/20		G	G	N/L	SO: BAR (P) OPM: Buddy PBS A: N stool Buddy has (+) stool on PBS P: ✓ 1/WK on OP	[redacted]
1/9/20		G	G	N/S	SO: BAR (P) OPM: Buddy PBS - this animal has N stool Pairmate has SS P: ✓ 1/WK on OP	[redacted]
1-10-20	16.5					[redacted]
1/16/20		G	G	N	SO: BAR A/P see 1/9 S2: Note 1 kg wt gain in 3-4 wks P2: Notify project staff	[redacted]
1/23/20		G	G	LC	SO: BAR P OPM: Buddy PBS A: Stable P: Move on OP w/ Buddy ✓ AHS 1/WK	[redacted]
1-24-20	16.0					[redacted]
1-27-20		G	G	N	SO BAR: OP Buddy supp; Animal off PBS since 1-14-20. Animal Active with NEPD. Stable. Small wt loss from 1-10-20 to 1-24-20 (.5kg). A: stable Animal. P: Assess to D/C ≈ 1-30-20	[redacted]
1/30/20		G	G	N	SO: BAR A: Stable P: D/C from OP (Buddy PBS)	[redacted]

☒ D/C ☒ Snomed ☒ Recharge

Obs Form 12-16-2011 G = Good, F = Fair,

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/20/19		G	G	L	SO: BAR, (P), OPM: Liquid stool. Ate PBS.	
					Re: Liquid stool.	
					A: Confirmed variable stool in cages on	
					PBS, unconfirmed source	
					P: Continue PBS	
					VIS ✓ 1x/week on OPM	[redacted]
12/21/19		G	G	L/N	So: BAR (P) Re: LIQ. STOOL; NEPD, READILY	
					ATE TREATS. MILD TAIL STAIN, ATE PBS.	
					A: LIQ. STOOL ON Tx	
					P: CTM ON OP 1x/WK, CONT. Tx AS PLANNED	[redacted]
12/22/19		G	G	CC	SO: BAR(P) OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: liq. stool in tx P: CTM _1_x/wk on OPM or as reported. large amt. liq stool per hus. tech. consider rt ✓ +/- addtl. tx if reports cont. MMU bright + active, ate PBS	[redacted]
12-23-19		G	G	CC	SO BAR (P) RE: liquid stool; cage cleaned prior	
					to observation. Animal Active with NEPD	
					Readily ate offered training treats.	
					A: liquid stool report; on PBS tx.	[redacted]
12/23/19					Per project staff buddy confirmed to	
					be source donkey	
					A: Buddy has liquid stool, some reports	
					of only liquid stool suggests this animal	
					may have variable stool	[redacted]
					P: continue PBS + VAHS 1x/wk	[redacted]
12/24/19		G	G	L/SS	So: BAR (P) RE: LIQ. STOOL; MOSTLY SS STOOL	
					IN CAGE PAN, UNABLE TO DETERMINE SOURCE.	
					NEPD, READILY ATE TREATS. A: VARIABLE STOOL	
					ON Tx P: CTM 1x/WK ON OP, CONT Tx	[redacted]

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PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/18/19	15.57					[redacted]
11/05/19					MMU [redacted] moved to [redacted] move # 19-780	[redacted]
11/14/19	15.7					[redacted]
11/17/19		G	G	N	SO: BAR (P) RE: Vomit. Cage cleaned by NEPD. readily ate treats. time of observation. A: Unable to confirm emesis. 1st recent report P: CTM on MH / OP.	[redacted]
11/27/19	16.1					[redacted]
12/2/19					__pre-project physical __x pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	
12/2/19					MMU [redacted] 1.7 MLS KET/BLED 6 MLS/D->1310 W.O. 3868 PRS02	[redacted]
WT: 15.98					CAGE TIME 2:50 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___	[redacted]
12/13/19	16.0				Box weight	[redacted]
12-17-19		G	G	CC	SO BAR (P) RE: liquid stool : cage cleaned prior to observation. A: liquid stool 1st report P: ctm on MH.	[redacted]
12-18-19		G	G	L	SO: BAR (P) Re: Liquid stool. Stool in cage was normal, semi solid, (liquid,) clean cage. A: Confirmed / Unconfirmed P: CTM 2nd report.	[redacted]
12-19-19		G	G	L	SO: BAR (P) Re: Liquid stool. Stool in cage was normal, semi solid, (liquid,) clean cage. A: Confirmed / Unconfirmed P: CTM 3rd report.	Vis ✓ 1x/wk
					Admit ✂ Prob. Sheet ✂	[redacted]

MMU [redacted] M
8yrs 7mos 16.00kg NRL03

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose

1.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 12-19-2019 End 01-14-2020

1.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 12-19-2019 End 01-14-2020

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/9/19	14.43					[redacted]
8/9/19		G	G	N	SO: BAR RE: VOMIT ; <1ml DRIED VOMIT IN	
					CAGE PAN. NEPD. READILY ATE TREATS.	
					A: 1ST REPORT FOR VOMIT	
					P: CTM ON MH	[redacted]
8/10/19	14.30				mvd to [redacted] #19-559	
8-22-19	14.43				BX	
8/23/19	14.43					
8/28/19		G	G	N	SO: BAR (P) RE: (R) ANM ; MINOR LESION ~1mm²	
					(R) DORSAL FOREARM. NOTED OVERGROOMING BOTH	
					FOREARMS. LESION IS C+D & SCABBED. Ø	
					ENYTHEMA. NEPD	
					A: MINOR LESION (R) ANM	
					P: CTM ON MH, CONTACT PBHS ☒	[redacted]
9-6-19	14.31				[redacted] [redacted] **9/6/2019**	
					1.7 mls Ket. BCS= 3.25 Tartar: 0 (1) 2 3 4 Teeth Scaled (Y) N	
					TB Test: (R) L Eye 24hr ___ 48hr ___ 72hr ___	
					TL Kyphosis 10°	
					·3 Dexmed/ATIP IM	ANIMAL MONITORED UNTIL RECOVERED
					L inguinal hernia ~ 7cm x 4cm x 3cm, soft, non-reducible, unable to fully descend testicle	
					Multiple erythematous scabs over L arm w/alopecia	
					Mild inguinal sebaceous buildup. cleaned w/DNS	[redacted]
9/20/19	14.83				Box weight	
10/4/19	15.25					[redacted]
10/1/19					SO: Total animal of it's wt sheet. this	
					animal's ideal wt is 14-15 kg. P. CONT	
					to only feed 7/7 bsc. to prevent	
					animal from gaining wt	
					(Vet recommendation)	[redacted]
					Animal also receives feeding treats	

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PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊙	Hydration (G, F, P) ⊙	Stool (N, SS, L, B) ⊗	Observations	Initials
3/28/19					1.8 MLS KETMINE IM, BLED 3 MLS, ROOM ROUND UP, BCS 4.0	[redacted]
WT: 15.14					TB TEST LEFT EYE 24HR-✓ 48HR-✓ 72HR-✓, ANIMAL MONITORED UNTIL RECOVERED	
4/5/19	15.72					[redacted]
4/29/19		G	G	N	⊗: BAR Re arm ⊙ side; noted overgrooming	
					+ marked erythema, pinpoint lesions (~3) w/	
					no broken skin. No active picking or scratching	
					observed.	
					A: mild overgroom/erythema ⊗ ⊙ forearm, no tx	
					P: cim on MH, email BHS ☆.	[redacted]
5.1.19					REMOVED COLLAR PER REQUEST	
5/3/19	15.30					
5/17/19	15.25					
5/31/19	15.71					
6/14/19	14.97					
6/28/19	14.73					
7/12/19	14.55					
7/26/19	14.72					
8/6/19						
8/6/19	MMU [redacted]				1.4 MLS KETAMINE / ~> D 1302 W/O 2319 SPF01	[redacted]
W 14.93					CAGE TIME: 2.30 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HRS ___	
8/7/19					MV.d To [redacted] move # 19-532	[redacted]

Cardiologist guided echocardiogram performed due to: pre-shipment / pre-project / clinical / genetic
Blood pressure and heart rate readings obtained
Preliminary results: Normal / Suspect (await final results)

Comment: _____

Final Echo Result: **LVH Negative** [redacted]

gave 1.0 mls metoclopramide IV per DVM

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PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
12/25/18	cont.	G	G	N	@ (R) corner of mouth ~1cm. NEPD, no scratching seen.	
					A: mild facial dermatitis, no tx. @ this time.	
					P: CTM on routine MH.	[redacted]
12/28/18	16.25					[redacted]
1/11/19	16.18					[redacted]
1/25/19	16.18					[redacted]
2/8/19	16.32					[redacted]
2/22/19	16.22					[redacted]
3/13/19	15.88					[redacted]
3/15/19		G	G	N	SO: BAR (P) RE: Vomit. Cage cleaned by NEPD.	
					time of observation.	
					A: Unable to confirm emesis. 1st recent report	
					P: CTM on (MH) OP.	
						[redacted]
3/22/19	598					[redacted]

PHYSICAL EXAM

Date 3/25/19 Weight 15.98 BCS 4.0

HR 144 RR 30 TEMP 97.8 ☐ Project Code ☐ Shave Tattoo

1. Integument WNL patchy alopecia of dorsum
2. Oral Cavity mild tartar, scaled
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NE

SO: Received sedated
A: Stable animal
P: CTM on routine exams [redacted]

Animal may be unpaired or individually housed while receiving veterinary care.

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/16/18	cont.	G	G	N	A: minor pinpoint lesions on forearm (R).	
					P: CTM on MH, consider discussing animal w/ BHS	
					if trauma increases/persists	[redacted]
10/17/18		G	G	N	SO: BAR Re: (R) arm trauma. Noted multiple	
					areas @ (R) forearm w/ out hair + mildly	
					erythematous lesions (pin point) @ (R) forearm.	
					No broken skin, skin appears otherwise CDI.	
					A: Mildly erythematous pin point lesions, healing	
					by 2 int. NEPD. P: CTM on MH + contact BHS	
					if lesions progress.	[redacted]
10/24/18		G	G	N	SO: BAR Re: (R) arm trauma. Noted sm. round	
					lesion ~3-4 mm in diameter, appears CAD	
					scabbed. A: Minor trauma healing by 2 int.	
					P: Email BHS for eval. CTM on MH, await	
					results of assessment.	[redacted]
10.29.18					Moved to → [redacted] M/O 18-610	[redacted]
11-5-18					moved → [redacted] MV # 18-621	[redacted]
11/8/18	16.28				BOX WT	[redacted]
11/16/18	16.19					[redacted]
11-21-18		G	G	CC	SO: BAR (P) RE: Arm trauma (L) side: Small lesion	
					notes on (L) wrist ≈ 2mm. Appears to be	
					dry and scabbed. Animal not paying attention	
					to area at observations.	
					A: minor (L) wrist skin lesion.	
					P: CTM on M/F.	[redacted]
11/30/18	16.20					[redacted]
12/14/18	16.30					[redacted]
12/25/18		G	G	N	SO: BAR ~~OPA~~: ① Re: crusty lip; Noted mild dryness	[redacted]

① RL [redacted] 12/25/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/5/18		G	G	N	SO: BAR RE: (R) arm + (L) leg trauma. Noted lesions	
					@ (R) arm + (L) leg. lesions appear C+D w/ mild	
					erythema @ margins. Was able to visualize 2 lesions	
					@ (R) forearm + 1 lesion @ (L) leg (medial calf).	
					A: Suspect pick lesions. P: Email BHS, CTM on MH	[redacted]
9/7/18	15.70					[redacted]
9/21/18	15.62					[redacted]
9/24/18					SO: BAR RE: (L) leg trauma, 2mm lesion anterior	
					aspect of ankle. Moderate erythema, no scabbing,	
					suspect picking lesion. A: Persistent pick lesions	
					P: Await BHS assessment.	[redacted]
9/28/18	15.24					
					[redacted] [redacted] 9/28/2018	
					1.0 mls Ket. BCS= 3+ Tartar (0) 1 2 3 4 Teeth Scaled Y (N)	
					TB Test (R) L Eye 24hr – 48hr – 72hr –	
					patchy alopecia w/ pinpoint lesions on arms and legs (scabs)	
					mild sebaceous build up in bathing regions, cleaned w/ DNS and applied aloe	MONITORED UNTIL RECOVERED
					testicles palpated normally	
					trimmed nails 1 ml cox	[redacted]
10.15.18					Animal removed from decreased chow, per vet request	[redacted]
10/15/18		G	G	CC	SO: BAR RE: (R) arm trauma; 1/2 cm lesion on inner (R)	
					forearm. lesion appears C+D, scabbed w/ notable hair loss	
					around lesion. No erythema or swelling noted, readily	
					ate treats. NEPD. A: (R) forearm lesion healing by 2° int.	
					P: CTM on routine MH.	[redacted]
10/16/18		G	G	N	SO: BAR RE (R) arm trauma; ~ 4 small pinpoint lesions	
					on (R) forearm. Significant hair loss on forearm, lesions	
					C+D, mild erythema. Readily ate treats, NEPD.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
6/11/18		G	G	N	SO: BAR (P) RE: Nasal Discharge. No coughing or sneezing. Nasal discharge: ~~clear, cloudy~~, none. A: Confirmed / Unconfirmed. 2nd report. P: CTM on MH / OPM	
						[redacted]
7/13/18	16.910					[redacted]
7/27/18	16.40					[redacted]
8/10/18	16.52					[redacted]
8/15/18		G	G	CC	SO: BAR (P) RE: Coughing / Nasal Discharge. Coughing: Yes / No Sneezing: Yes / No Erythema: mild, moderate, none. Nasal discharge: clear, cloudy, none. A: Confirmed / Unconfirmed. _____ report. P: CTM on MH / OPM Noted dry clear nasal d/c.	
						[redacted]
8/24/18	16.06					[redacted]
8/27/18		G	G	N	SO: BAR Re: R arm trauma; 3 small lesions on R forearm, mod erythema, no scab or open lesion, possibly pick lesions A: minor trauma to R arm P: no tx needed at this time. CTM on routine MH	
						[redacted]

8/31/18 MMU [redacted] BOX LOAD INTO TRANSPORT TRUCK W/O 272

WT:

						[redacted]
8/31/18					SO: Transported to [redacted] for MRI, project NR102 WO# 2722. Sedated with ketamine 1.7 mls, Animal was / was not placed in Steriotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal did / did not receive Ketoprofen IM 0.8 mls IM	
						[redacted]
						[redacted]
9/3/18		G	G	CC	SO: Re: (R) arm trauma. MMU BAR, noted sm. abrasion to (R) forearm. Area appears CHD scabbed. A: minor trauma healing by 2 int. P: CTM on MH.	
						[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5/4/18	18.18					[redacted]
5/18/18	18.22					[redacted]

5/22/18 MMU [redacted] 1.9 MLS KET IM, COLLARED W.O. 1371 NRL02

WT: ——— CAGE TIME 1000 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___

6/1/18		G	G	N	SO: BAR, Re: NAR: Bleeding underside of hind tail. Animal has no noted trauma, but has some blood on rump and tail base. Cage change preformed this am. Suspect self reduced rectal prolapse. Mbring normally in cage. ~2ml blood in cage w/ a tiny bit of tissue. Took treats. Active. NEPD. No tx needed at this time. A: Confirmed blood in cage suspect self reduced rectal prolapse-NEPD P: CTM on MH [redacted]

Animal # [redacted] Room#: MB [redacted]

6/2/18		G	G	N	SO: BAR (P) Re: Blood undetermined. No noted trauma to face, digits or body. A: Unable to determine source of blood, NEPD. P: CTM on MH [redacted]

6-5-18		G	G	CC	SO: BAR RE: Nasal Discharge. No coughing or sneezing. Nasal discharge: clear, cloudy (none). A: Confirmed / (Unconfirmed) _____ report. P: CTM on (MH) / OPM [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/23/17						
					Cardiologist guided echocardiogram performed due to: shipment / project / clinical	
					Preliminary Results: WNL	
					Final report pending	
					Final Echo Result: LVH Negative	[redacted]
11/15/17					Moved to [redacted], MO # 17-734	[redacted]
12/26/17					CT SCANNED	
12/26/17					MMU [redacted] 1.33 MLS TELAZOL IM, D→ 1302, CRX01 W.O.# 4168	
	WT:				CAGE TIME: 2:05 15MIN 1 30MIN 1 45MIN 1 1HR 1 1.2SHR 2 1.5HR 2 1.75 3 2HR	[redacted]
1/4/18	18.68					[redacted]
01.31.18					Animal placed on declawed chows, free diet manipulation from	
2-6-18	18.88				BWT	
2/14/18					Moved → [redacted] per MO # 18-100	
2/14/18		G	G	N	SD. BAR. Re: sneezing. MMM resting comfortably in	
					enclosure. No sneezing noted @ time of observation.	
					No nasal or ocular d/c either. A: Unable to	
					confirm sneezing. CTM on MH.	[redacted]
3/9/18	18.70					[redacted]
3/23/18	18.38					
4/6/18					MMU [redacted] / 2.0 ML KET IM, COLLARED W/O 5368 NRL02	
					TB TEST L EYE 24HR / 48HR / 72HR / ROOM ROUND UP	
	WT: 18.04				CAGE TIME: 8:15 15MIN 1 30MIN 2 45MIN 3 1HR 75MIN 1.5HR 1.75MIN 2HR	
4/20/18	18.30					[redacted]
5/3 /18					CAGE TIME 11:05 15MIN 1 30MIN 1 45MIN 3 1HR 1.25HR 1.5HR 1.75HR 2HR	
[redacted]	[redacted]				1.5cc Ket - collar attempt 1132 NRL02	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

☐ VIR[redacted]

Shipped

4580

BZ59 / NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

☐ VIRAL PRECAUTION

MMU [redacted]
ANIM

[redacted]
INVESTIGATOR REQUESTOR

HEATOLOGY

9 / 28 / 20
DATE OF SAMPLE

ANIMAL DAT[redacted]
ROOM CAGE

M 9 YR 4 MO 17.6 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-shipment

HOSPITALIZED ☐ NO ☐ YES ____ - ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	4.6	X 10 ^3/ µl
RBC	5.16	X 10 ^6/ µl
HEMOGLOBIN	12.4	gm/dl
HEMATOCRIT	38.1	%
MCV	74	fl
MCH	24.0	pg
MCHC	32.5	pg/fl
PLATELETS	3.62	X 10 ^5/ µl
☐ RETICULOCYTES	%	X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.1	gm/dl

☐ SMEAR EVALUATION: TOTAL WBC 4.6 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	64	2944
LYMPHOCYTES	30	1380
MONOCYTES	5	230
EOSINOPHILS	1	46
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

[redacted]
a-

REPORTED BY: [redacted]

REPORT DATE: 9/28/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

PC13 (3/14)

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 9/28/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL03

Negative TB Test Date: 9/28/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: 17.28 Temp: 98.1 HR: 110 RR: 20 BCS: 4.0 Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	clear
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 9/28/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Yersinia (+), treated - Resolved 5/13
Various mild/mod general traumas, treated - All Resolved
Vasectomy 7/11/21 Minor Pick lesions noted 9/17 → current
Non-path diarrhea, treated - Resolved 1/20

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/28/20 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - NR; Chem - NR

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
____ Approved for project pending lab review
X Approved for shipment
____ Stable weanling
____ Other

Comments:

Examining Veterinarian: [redacted] Date: 9/29/20

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 12/2/19

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: SRI / NLL

Negative TB Test Date: 12/2/19

Physical exam findings: (to be completed by Veterinary staff)

Weight: 15.98 Temp: 100.4 HR: 126 RR: 30 BCS: 3.5 Gender: M F Comments:

Integument	NAO	A	NE	Thin hair over shoulders, lower legs, & forearms, pinpoint scabs on L forearm & over shoulder crusts over upper back 2x2 cm w/ abrasions underneath
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 12/2/19 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Diarrhea, yersinia +, treated - Resolved 5/13
(R) H D2, suspect calcinosis cutis Vasectomy Sx - 7/14
Back lac w/ muscle, treated - Resolved 1/17 History of minor pick lesions from grooming.

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 12/2/19 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - no clinically significant changes
Chem - mildly elevated CRP: 18, may be related to skin lesions
RC (-) for pathogens

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
____ Approved for project pending lab review
____ Approved for shipment
____ Stable weanling
X Other Lab elected not to ship

Comments: significant recent wt. gain. Skin lesions are minor, but might explain ↑ CRP

Examining Veterinarian: [redacted] Date: 12/11/19

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

1942

☐ VIRAL PRECAUTION

BZ59 PRS0Z
ID PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

mmu [redacted]
ANIMAL I.D.

12.2.19
DATE OF SAMPLE

M SEX | 8 YR 6 MO AGE | 15.70 KG WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Pre-Shipment

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S)

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA	✓	
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☐ AEROBIC		
☐ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1.
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 12/4/19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5753

B259 PRS02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

12 2 19
DATE OF SAMPLE

ANIMAL DATA: [redacted] -
ROOM CAGE

M 8 YR 6 MO 15.70 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

pre-Shipment

HOSPITALIZED ☐ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	8.5	X 10 ^3/ µl
RBC	4.89	X 10 ^6/ µl
HEMOGLOBIN	11.7	gm/dl
HEMATOCRIT	36.1	%
MCV	74	fl
MCH	24.0	pg
MCHC	32.5	pg/fl
PLATELETS	3.28	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.2 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 8.5 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	65	5525
LYMPHOCYTES	25	2125
MONOCYTES	7	595
EOSINOPHILS	3	255
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

12/2/19 [redacted]

12/2/19 [redacted]

REPORTED BY: [redacted]

REPORT DATE 12/2/19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requester

PC13 (3/14)

2472

☐ VIRAL PRECAUTION

B259, PRS002
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

12, 2, 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 8 YR 6 MO 15.70 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-Shipment

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☑ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	147	mM/L	15		CPK (S,HP)	601	U/L	25		pH		
2		POTASSIUM (S,HP)	4.1	mM/L	16		ALK PHOS (S,HP)	118	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	112	mM/L	17		GGT (S,HP)	103	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	25	mM/L	18		LDH (S,HP)	159	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	14		19		CHOLESTEROL (S,HP)	131	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.2	mg/dl	20		TRIGLYCERIDE (S,HP)	119	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.1	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	19	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	73	mg/dl	24	*	hsCRP	18	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.9	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.7	g/dl										
13		ALT (S,HP)	28	U/L										
14		AST (S,HP)	18	U/L										

REPORTED BY [redacted] DATE: 12/2/19

PERFORMED BY: CNPRC ☒ VMTH☐ OTHER ☐

*Verified by Repeat 12-2-19

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

B759 NRL02

[redacted]

47

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECA

MMU [redacted]

ANIMAL DATA: [redacted]

CAGE

9 / 28 / 18
DATE OF SAMPLE

M SEX

7 YR 4 MO AGE

15.62 KG WEIGHT

EXPERIMENTAL X

PROCEDURE IS: DIAGNOSTIC AID

CLINICAL SIGNS / PROBLEMS:

COLONY MANAGEMENT

PRIOR THERAPY ☐ NO ☐ YES

HOSPITALIZED ☐ NO ☐ YES

ROOM CAGE

FACS

☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl

CD8= /µl

CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

☐ SMEAR EVALUATION: TOTAL WBC 4.4 X 10 3 / µl

☐ CORRECTED WBC ____ X 10 3 / µl

WBC	4.4	X 10 ^3/ µl
RBC	5.02	X 10 ^6/ µl
HEMOGLOBIN	11.6	gm/dl
HEMATOCRIT	36.8	%
MCV	73	fl
MCH	23.2	pg
MCHC	31.6	pg/fl
PLATELETS	3.65	X 10 ^5/ µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	47	2068
LYMPHOCYTES	42	1848
MONOCYTES	9	396
EOSINOPHILS	2	88
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

☐ RETICULOCYTES % X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 6.8 gm/dl

PLASMA COLOR:
☐ NO ABNORMALITIES
X HEMOLYZED SL
☐ ICTERIC
☐ LIPEMIC

FIBRINOGEN

REPORTED BY: [redacted]

COMMENTS:

PARTIALLY CLOTTED SAMPLE ☐

CLINICAL

White - Animal's chart

HEMA

REPORT DATE:

23-01594_000236

UCD 0199

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 8/31/18
Wt (kg): 16.49 Age: Sex: M/F Procedure: MRI Skull ET Tube size: 6mm
Investigator: [redacted] W/O# 2722 Project: NPR22 IV Catheter Placement: Ø

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	1.7ml/5	IM	~9:20a				

Fluid Type LRS **Additives**: Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP —

Time:	931	947																				
Temp:																						
160																						
150																						
140																						
135																						
130																						
125																						
120	•																					
115		•																				
110																						
105																						
100																						
95	✓	✓																				
90																						
85																						
80																						
75																						
70																						
65																						
60																						
55	X	X																				
50																						
45																						
40																						
35																						
30																						
25																						
20																						
15																						
10	O	O																				
SIGH																						
Fluids total/rate	N/A																					
CRI:	N/A																					
Iso FI (%)/ Oxygen (L)	1.5/8	1.8/8	2.5L																			

Complete recovery @ 11:15

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials [redacted]

CNPRC Diet Manipulation Request Form

Animal ID: [redacted] Age: 6.5 years Sex: M

Project Code: NRL 02 Animal Location: [redacted]

Date of request: 1-26-18

Principle Investigator [redacted]

Requestor: [redacted]

Animal's current daily diet: AM 7

PM 7

New diet being requested: AM 5

PM 5

Current weight 18.68 kg Current BCS: 4.0 @ 16.6 kg

Vet Assessment (OP Use Only) – For decreased chow requests only

- ☒ Review weight and BCS history
- ☒ Confirm/Review current diet
- ☒ Check Pairing Status (health status and BCS of partner) – CP - ~~will go IP for feeding~~ separate for feeding [redacted]
- ☒ Review health concerns
- ☒ PI notified / PI requested change

[redacted] Approved _____ Not Approved (Explanation: _____)

[redacted] 1/31/18

Approval Signature and Date (upon approval, submit this form to husbandry supervisor for implementation and updating of health jacket)

[redacted] 01-31-18 Cage Sign/Date (sign removed 10-15-18 [redacted])

[redacted] 1/31/18

Husbandry Supervisor Signature and Date

[redacted] 01-31-18 Health Jacket/Date

Removed from decreased chow on 10-15-18 per vet request.

Animal ID# MMU[redacted] **California National Primate Research Center** Page # 54

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/14/19	cont.				A/P: see 3/12 entry.	[redacted]
3/15/19		MMU[redacted]			0.7 MLS KET /D→SURGERY W.O. 4986 NRL02	[redacted]
	6.52					
3/15/19					SO: Rec'd in [redacted] prep per WO#4986, NRL02.	
					intubated and placed catheter w/	
					PRN. moved to [redacted] for Ephys Recordings	
					Aseptically prepped. Performed bilateral	
					cranial explants. A: Terminal	
					bilateral cranial explants.	
					P: Delivered to necropsy post [redacted]	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
3·9·19	cont'd				→ suppurative material and inflammation.	[redacted]
3/9/19		G	G	N	SO: BAR (P) OPM: cran. imp. inf.; imp. C+D, NEPD.	
					recent cleaning. Inc CDI.	[redacted]
3/10/19		G	G	N SS	SO: BAR (P) OPM: cran imp. inf; inc. CDI w/ mild scabbing,	
					+ erythema. Wells C+D, NEPD.	[redacted]
3/11/19		G	G	N	SO: BAR, paired OP: cranial implant; implant appears	
					C+D, no d/c seen, good mentation, moving normally	[redacted]
3/12/19		fair	G	N	SO: BAR OPM: cran. imp. inf; implant CDI, no purulence	
					observed. Inc CDI, scabbed @ midline inc.	
3·12·19					Evaluate animal when sedated for cleaning, small	
					circular ulcers on the incisional line, two	
					abrasion over both pillbox, no discharge,	
					unable to find a pocket	
					A: Stable infected head implant, control w/	
					antibiotherapy (cephalexin)	
					P: Terminal Sx planned for Friday (March 15)	
					Continues cephalexin (3·19)	[redacted]
3/12/19 MMU [redacted] LOCATION [redacted] MLS KET						[redacted]
WT: 6·57 CAGE TIME 2·20 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						[redacted]
3/13/19 10:32						[redacted]
3/13/19		G	G	N	SO: BAR (P), OPM: Cranial implant infect	
					Afte PBS. (1) pinpoint lesion on dorsal	
					aspect of head C+D, scabbed Implant	
					CDI margins wnl, no crusting, no	
					erythema, no swelling, no picking. NEPD.	[redacted]
3/14/19		G	G	N	SO: BAR (P) OPM: cran. imp. inf.; Noted 10 mls vomit in	
					cage pan. Inc CDI, scabbed, no reddening or exudate.	
					Animal ate PBS, readily took treats, active.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/6/19		G	G	N	SO: BAR OP: head abscess ; no discharge seen,	
					mild crusting around base of implant, difficult	
					to see as animal is not very compliant	[redacted]
3/7/19		G	G	N SS	SO: BAR OPM: CRAN IMP. INF. ; Head wells CDI w/ mild	
					scabbing surrounding. No purulence observed. Ate PBJ,	
					stool mostly normal, no liq. seen. Active animal, NEPD.	
					A/P: see 3/5 entry.	[redacted]
3/8/19		~~Fair~~	G	N	SO: BAR (P) OPM: cranial imp. inf. ; animal bright + active, no	
					obvious changes from 3/7 observation.	
					A/P: see 3/5 entry.	[redacted]
					Evaluate when animal sedate, (R) pill box w/	
					1 drop of purulence material, no pocket or	
					tract @ this time, clean w/ DNS + cut hair	
					A: Very mild purulent d/c from (R) pill box	
					P: Finish cephalexin (3-19-19)	
					Clean weekly	[redacted]
					CTH implant	[redacted]
3/8/19	MMU [redacted] 0.7 MLS KET/ D→ 1310 W.O. 4903 NRL02					
WT: 6.38	CAGE TIME 2:00 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR					
3-9-19					Microbiology results: on 3/7 Staph coag + (1+)	
					on 3/8 Enterococcus sp (1+)	
					Staph coag + susceptible to cefazolin, ceftriaxone,	
					enrofloxacin + penicillin + vancomycin. Cont. cephalexin	[redacted]
					Cytology results: Moderate to large #'s of neutrophils	
					w/ scattered foamy macrophages and epithelial cells +	
					rare eosinophils. Gram stain: very rare extracellular	
					Gm + coccoid bacteria forming short chain. Conclusion:	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/3/19	cont				implant infection and 2° LS from abx.	
					P: vis ✓ Daily, cont tx as planned	
					cont weekly cleanings	[redacted]
3/4/19		G	G	N	SO: BAR, paired OPW: Implant infection,	
					mild crusting @ rostral R implant,	[redacted]
					no erythema. A/P su 3/3	[redacted]
3/5/19	6.18				SO: Animal sedated for cranial implant	
					assessment & cleaning. By applying	
					pressure on the (R) pillbox & laterally	
					we were able to express ~1 ml	
					of purulence d/c. We were unable	
					to expel all of it w/o creating a larger	
					pocket. Obtained a culture & swab (swabbed)	
					for cytology. Cleaned w/ Betadine	
					& saline.	[redacted]
3-5-19					ANI # [redacted] LOC: [redacted] DATE: 3-5-19 (1 sedate) (2 moving) (3 sitting up) 0 min 1 15min 2 30min 3 45min ___ 60min ___ 1.25hr ___ 1.5hr ___ 1.75hr ___ 2hr ___	A.L.t
3/5/19					SO: Cytology (3/1) cocco bacl in chains (that's why the cephalexin was changed to clindamycin). Culture (3/1) 1+ Staph Coag + sensitive to cephalexin & enro	
					A: No real change in amt of purulence	
					P: D/C AB back to cephalexin as it is only BID & we can't tx longer w/o fear of diarrhea. CTM Await culture & cytology recheck, F/W d/c daily	[redacted]

MMU [redacted] F
10yrs 9mos 6.58kg NRL02

Clindamycin 150 mg/mL
12.50 mg/kg Dose — 82 mg Total Dose
0.50 mLs Volume — IM Rte — TID Freq — 4 Days
Start 03-02-2019 — End 03-05-2019

10yrs 9mos 6.58kg NRL02

Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 197 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 14 Days
Start 03-06-2019 — End 03-19-2019

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
3/2/19		G	G	N	S0: cytology - Marked Neutrophils	
MMU [redacted] 10yrs 9mos 6.58kg NRL02 F					ranging from degenerate - Non-degenerate	
Cephalexin 250 mg/caplet 30.00 mg/kg Dose 197 mg Total Dose					to bands, Extracellular bacteria	
0.80 caps Volume PO Rte BID Freq 2 Days Start 03-01-2019 End 03-02-2019					Small and coccoid chains consistent	
Probiotic Sandwich 1.00 sndwch/animal Dose 1. sndwch Total Dose					w/ strep. A: head well inf	
1.00 sndwch Volume PO Rte BID Freq 27 Days Start 03-02-2019 End 03-28-2019					P: vet assess daily, end cephalexin,	
Clindamycin 150 mg/mL 12.50 mg/kg Dose 82 mg Total Dose					Start clindamycin + PBS	[redacted]
0.50 mLs Volume IM Rte TID Freq 7 Days Start 03-02-2019 End 03-08-2019					S02: BAR (P) OPM Cranial implant	
					infection. Skin Margins around implant	
					are CDI w/ Minor scabbing. Did	
					Not observe any erythema or swelling	
					cage-side. No clinical signs (neuro)	
					Noted. Eagerly ate treats. NEPD	
					A: Cranial Implant infection on tx	
					P: CTM on OPM Daily, vet	
					assess tomorrow. Cont tx as	
					Planned.	[redacted]
					Admit ⊗ Prob. Sheet ⊗	[redacted]
3/3/19		G	G	CC	S0: BAR Re: light & paired, mild tail staining, case	
					recently housed A: 1st recent report for diarrhea, likely	
					secondary to abx, on PBS P: CTM on OP & as reported	[redacted]
3/3/19		G	G	CC	S02 BAR OPM: Cranial implant infection	
					Animal active in cage. No discharge,	
					swelling or erythema noted around	
					implant. Currently on tx.	
					A2: Apparently stable animal w/ cranial	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

mmu

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/1/19					SO: Rec'd in [redacted] per WO#4760, NRL02.	
					monitored under ketamine sedation.	
					Crusted blood around (R) implant port,	
					clean off w/ DNS. Skin on/around (R)	
					port seemingly healthy. Expressed	
					~1-2mL yellow/tan purulent d/c from the top of	
					(R) pillbox, stemming from area between	
					pillboxes. SRA obtained sample for	
					cytology & submitted to clin. labs.	
					Hair was trimmed around implants	
					& area cleaned w/ dilute betadine	
					scrub. Toward the end of recording	
					it was noted that there was a bulge	
					over the (R) pillbox w/ when pressed	
					& pressed ~0.5mL of serosanguinous	
					fluid that wells up over/around	
					(R) pillbox) A culture was obtained	
					P: Suspect Infected implant P: SRA AB Rx	
					+/- anti inflam. Discuss ST & LT	
					plan monitor closely ✓ DAILS & for	
					d/c & "swelling" daily	[redacted]
					Consider sedating for assessment/eval	
					on 3/5	

MMU [redacted] F
10yrs 9mos 6.58kg NRL02

Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 197 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 10 Days
Start 03-01-2019 — End 03-10-2019

MMU [redacted] F
10yrs 9mos 6.58kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 33 mg Total Dose
0.33 mLs Volume — IM Rte — SID Freq — 3 Days
Start 03-01-2019 — End 03-03-2019

ANI # [redacted] LOC: [redacted] DATE: 3-1-19 ~~OGTT Rec'd → Gate w/ WO 4760~~ (1 sedate) (2 moving) (3 sitting up)

Cage Time 0min 2:42 15min 1 30min 2 45min 3 60min ____ 1.25hr ____ 1.5hr ____ 1.75hr ____ 2hr ____ [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/1/19					MMU [redacted] / 0.7 CC KET/D->1310 W/O4462 NRL02	
WT: 6.41					CAGE TIME 2:10 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	
2/8/19	6.22				SO: Rec'd in [redacted] per wo#4521, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Implant margins C&D, well epithelialized. Additional 0.5ml Ket IM given during procedure.	[redacted]
2/8/19					MMU [redacted] 0.7 CC KET /D->SURGERY W/O 4521 NRL02	[redacted]
WT: 6.18					CAGE TIME 2:45 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	
2/9/19		G	G	N	SO: BAR, paired R: POOR APP; no chow remaining, eagerly took treats A: unconfirmed report, possibly slow to eat chow, stable weight P: CTM on LTP & as reported	[redacted]
2/15/19					SO: Rec'd in [redacted] per wo#4583, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub.① ~~Performed neuro recordings~~ then returned to homecage for recovery	[redacted]
2/15/19					MMU [redacted] LOCATION [redacted] / [redacted] MLS KET	↓
WT: 6.16					CAGE TIME 1:40 15MIN / 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	
2/22/19	6.48					[redacted]
2/22/19					SO: Rec'd in [redacted] per wo#4666, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub.② ~~Performed neuro recordings~~ then returned to homecage for recovery	[redacted]
2/22/19					MMU [redacted] LOCATION [redacted] / 0.6 D->SURGERY MLS KET W/O 4666 NRL02	[redacted]
WT: 6.58					CAGE TIME 1:45 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	
3-1-19	6.15				0.6 cc KET -> Room [redacted] W/O. 4760	[redacted]

① Did not do - [redacted] 2/15/19 ② Did not do - [redacted] 2/22/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/25/19					P. D/C from OP & Admit to LTOP	[redacted]
					Monitor @ weekly sedated	
					implant cleanings. If any s/c	
					or clin signs, consult vet &	
					consider re-culture +/- labs	[redacted]
					∅ D/C ∅ Snomed ∅ Recharge	[redacted]
1/25/19		G	G	N	SOBAR OAL: cranial implant	
					cranial implants CDI. No discharge	
					erythema or signs of infection noted	
					at this time. See above entry	[redacted]
1/24/19		G	G	N	SOBAR RE: bloody head - dried	
					blood around base of (R) cranial	
					implant. No separation of skin noted,	
					no trauma, N&PD - animal active.	
					A: cranial implant	
					P: CTML w/MHT, C+T prn	[redacted]

PHYSICAL EXAM HNU [redacted] ①

Date 2-1-19 Weight 6.1 BCS 2.0

HR 124 RR 16 TEMP 100.7 ☐ Project Code

1. Integument head implant ☐ Shave Tattoo
2. Oral Cavity WNL, salivation ++
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal missing finger + toes
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation WNS

Alopecia around head implant, small scab <1mm in cranial area of the (L) bregma, mild overgrowth of skin in lateral areas of the (R) bregma, well epithelialized, shaved edge, clean w/ DDS

Animal may be unpaired or individually housed while receiving veterinary care

OR.E [redacted] 2-1-19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
1/18/19					[redacted]	
					Cranial Implant CLEANING Culture taken 1-18-19	
					0.6 mls Ketamine Ø mls Dexmedetomidine/Atipamizole	
					reversal or chaired cleaning	
					Implant (post edges) cleaned and hair trimmed	
					Novisan/(Betadine) was used to clean the implant.	
					Discharge: (Y) / N see below	
					Amount of discharge: minimal dry blood on (e) post.	
					Color: normal	
					Additional Treatment: (e) bathes; dry blood cleaned off	
					no apparent d/c, no inflammation, mild bleeding.	[redacted]
1/18/19	MMU [redacted]				0.6 MLS KET, D→ 6012 W/O 4285 NRL02	[redacted]
WT: 602	CAGE TIME 1:35	15MIN 2	30MIN 3	45MIN	1HR 1.25HR 1.5HR 1.75HR 2HR	
1/23/19		G	G	N	SO: BAP OPM. cran. imp. inf.; implant margins appear	
					CDI w/ very mild swelling @ posterior aspect of	
					implants. Noted occasional scratching to neck w/	
					(r) foot. No erythema or irritation seen.	[redacted]
1/24/19					A: Implants infection appears to have	
					resolved, culture results pending	
					P: VB ✓ 1x/wk, continue routine	
					cleaning, await culture results	[redacted]
1/25/19	6.29					[redacted]
1/29/19					SO: Rec'd in [redacted] per wo# 4322, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Implant looks CSD, no erythema or d/c. Ct a.i.	
						[redacted]
1/25/19	MMU [redacted]				LOCATION [redacted] MLS KET 0.6 cc	
WT: 6.38	CAGE TIME 2:38	15MIN 3	30MIN	45MIN	1HR 1.25HR 1.5HR 1.75HR 2HR	[redacted]
1/25/19					SO: Implant culture (1/18) 1+ Staph	
					coag (-) A: Probable normal flora	
					as no other clinical signs	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
1/11/19	6.20	G				[redacted]
1/11/19		F	G	N	SO: BAR OPM: Cranial implant. Implants appear	
					CDI w/ sm. amount of dry scab @ rostral aspect	
					of margin. Cleaned w/ DNS.	[redacted]
1/11/19					SO: Rec'd in [redacted] per wo# 4149, NRL02 Add. 0.50mL Ket IM	
					Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery given during procedure.	
						[redacted]
1/11/19					MMU [redacted] / 0.6 MLS KET/D → SURGERY W/O 4149 NRL02	
					WT: 5.86 3:30 CAGE TIME ___ 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	[redacted]
1/14/19					SO: MI tx (w/ cranial ended 1/4 (4 wk	
					tx (w/ cranial implant inf) A: Resolved	
					cranial implant (12/3) infection	
					P: ✓ @ sedated implant cleaning 1/wk	
					+/- add tx cleaning if needed	
					If no further clinical signs	
					Consider transfer to EIOP in ~2 wks	[redacted]
1/16/19		G	G	N	SO: BAR OPM: Cranial implant. Active & moving	
					well. Implants CDI w/ scab noted @ margins.	[redacted]
1/18/19		G	G	CC	SO: BAR OPM/RE: Head, dark dried blood around	
					one implant. Active & moving well, noted clean	
					margins @ both L + R implants. Suspect MMU	
					picked @ scabs. A: Stable implants. P: CTM on	
					OP 1wk + MIT.	[redacted]

© E.E. 1/11/19 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
1/4/19	cont.				OF dried sersanguenous scab @ margin. Cleaned	
					both L+R port w/ DNS, no d/c expressed from	
					either L+R port margins.	[redacted]
1/5/19		G	G	N	SO: BAR OPM: cran. implant inf.; Implants CDI w/ no	
					exudate, swelling, freshening, or erythema noted. NEPD	[redacted]
1/6/19		G	G	N	SO: BAR OPM: cran. implant inf; Implants CDI. Noted	
					very mild dried serous scab @ (L) port. No scratching	
					observed, animal active, NEPD.	[redacted]
1/7/19		G	G	N	SO: BAR OPM: cranial implant inf.; Noted no swelling or	
					erythema @ either port. Noted very small amount dried	
					serous scab @ anterior aspect of (L) port. Gently cleaned	
					both ports w/ DNS, no d/c expressed or palpated.	[redacted]
1/8/19		G	G	N	SO: BAR OPM: cranial implant inf.; Animal active, NEPD.	
					Noted small amount dried serous scab @ (L) port,	
					mild possible swelling posterior to both ports. Discussed	
					w/ Vet.	[redacted]
1/9/19					A: Abx to complete, infection appears	
					resolved.	
					P: Assess to ↓ frequency of ✓s to	
					3x/wk at end of wk, sedate to	
					clean 1x/wk, notify vet if purulent	[redacted]
					discharge recurs	[redacted]
		G	G	CC	SO: BAR OPM: Cranial implant infection. Active	
					& moving well. Implants appear CDI, no scab noted	
					@ margin. Cleaned margins w/ DNS.	[redacted]
1/10/19		G	G	N	SO: BAR OPM: Cranial implant infection. Active &	
					moving well. Noted sm. amount of dried	
					sero sanguenous scab along margins otherwise CDI.	[redacted]

① RC [redacted] 1/5/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] F
10yrs 7mos 5.88kg NRL02

Enrofloxacin 100 mg/mL
5.00 mg/kg Dose — 29 mg Total Dose
0.29 mLs Volume — IM Rte — BID Freq — 21 Days
Start 12-20-2018 End 01-09-2019
Modified Extended
Modified, Dose Ovrd, Extended | first dose given at 9:30 am

[redacted]-115660-00 Upd02JAN:14:16 Prn02JAN:14:17

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/2/19		G	G	N	SO: BAR OPM. Cran implant infection	
					Noted & crusting @ (R) port cranially	
					A: Cont. cran implant inf. on enrofloxacin	
					completed rtd tx. P: Extend antibiotic	
					Rx until cran implant can be evaluated.	
					If implant is clean consider ending	
					AB Rx & monitor closely for a couple	
					of weeks off AB +/- cytology	[redacted]
					SO2: Cleaned cranial implant w/ DNS (L)(R) port	
					Appears CDI. Noted sm. amt. of dried scab @	
					(L) port. Unable to thoroughly clean (L) Port due	
					to very active animal. No d/c expressed @ (R)	
					port @ cleaning.	[redacted]
1/3/19 MMU [redacted] LOCATION [redacted] / 0.6 MLS KET w/o # 4082 NRL02 (D → SURGERY) WT: 5.94 CAGE TIME 9:40 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						[redacted]
1/3/19					SO: Rec'd in [redacted] per wo# 4082, NRL02 Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Additional 0.50mL Ket IM given @ beginning of procedure.	
					SO_2: no d/c or crustiness around either port.	
					C&D.	[redacted]
1/3/19		G	G	CC	SO_3 BAR OPM: Cranial implant. (R) port	
					appears CDI, no scab noted @ margin. Noted	
					sm. amt. of serosanguinous scab @ rostral	
					aspect of (L) port. (L) port otherwise CDI.	[redacted]
1/4/19		F	G	CC	SO: BAR OPM: Cranial implant. (R) port appears CDI	
					w/ sm. amount of dried green d/c @ the caudal	
					aspect of port. (L) port appears CDI w/ sm. amount	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody
PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/28/18	Cont.				w/ DNS. No d/c expressed @ cleaning.	[redacted]
12/29/18		G	G	N	So: BAR OPM: Cranial implant Cranial	
					implant Margins CDI. No erythema	
					Swelling or D/c. Animal active in	
					cage and eating treats. A: Stable cranial	
					implant. P: CTM daily on OPM, Clean	
					PRN.	[redacted]
12/30/18		G	G	N	So: BAR OPM: Cranial implant. Implant	
					Margins CDI. Applied DNS to Margins	
					w/ cotton Swab. No d/c, erythema,	
					Swelling or crusting Noted. A: Cranial	
					implant stable. P: CTM on OPM	
					Daily, Clean Head Margins PRN	[redacted]
12/31/18		G	G	N	So: BAR OPM: cranial implant Implant	
					margins CDI. Small amt. of scabbing	
					@ ⓛ cranial implant margin. No	
					swelling, erythema or D/c noted.	
					A: Cranial implant Stable	
					P: CTM on OPM Daily, Clean	
					Implant Margins PRN Cont tx	
					as planned	[redacted]
1/1/19		G	G	N	So: BAR OPM: cranial implant. Implant	
					Margins CDI. Mild scabbing @ ⓛ	
					cranial implant. No swelling, D/c or	
					erythema. A: Cranial implant stable	
					P: CTM Daily on OPM, cont tx as planned	
					consider ↓ checks after tx ends	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/25/18		G	G	N	SO: BAR OPM: Cranial implant. RE: Crusty	
					head. Implant CDT. Small amt. of	
					scabbing @ (R) + (L) implant A: Stable	
					implant. P: CTM on OPM 1x/w, cont tx	
					as planned.	[redacted]
12/26/18		G	G	N	SO: BAR OPM: Cranial Implant + RE: Crusty head.	
					Active + moving well. Noted sm. amount of	
					dry d/c green in appearance @ (R) implant. Noted	
					sm. amount of dry serosanguinous d/c @ (L)	
					implant. A: Stable implant P: Clean implant after	
					project training 12/26/18. Vis ✓ daily, clean	
					implant 1x/wk.	[redacted]
					SO2: Cleaned implant(s) w/ DNS cage side. Noted	
					sm. amount of greenish d/c @ (R) connector, noted	
					normal serosanguinous (dried) scab @ margin of	
					(L) connector. Notified staff present in room @ time	
					of cleaning. Staff represent Lab staff / represent-	
					itive. D/c expressed from (R) lateral margin of (R) connector.	[redacted]
12/27/18		G	G	N	SO: BAR OPM: Cranial implant. Both L + R implants	
					appear CAD. No colored d/c noted @ (R) implant	
					@ time of observation.	[redacted]
12/27/18					A: focal cranial implant infection,	
					on enro thru 1/2 based on C/S	
					P: Vis ✓ daily, if discharge continues	[redacted]
					then assess to increase cleaning frequency.	[redacted]
12/28/18	5.90					[redacted]
12/28/18		G	G	cc	SO: BAR OPM: Cranial implant. Implants appear	
					CAD. Elected to clean both L + R connectors/implants	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

	Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
①	12/21/18		P	G	N	SO: BAR OPM: Cranial Implant. + Re: Head other	
						+ PA. Active & moving well, no noted changes	
						to Implant. Ate 0 chow, did eat all forage	
						& readily ate fresh fruit & peanuts. Suspect decreased	
						app. may be due to sedation/procedure on 12/20/18.	
						A: Poor app. 1st recent report. P: CTM on OP &	
						MH daily.	[redacted]
	12/22/18		P/F	G	N	SO: BAR Re: PA + Head crusty. Noted dry d/c	
						@ (R) implant. (L) side implant & incision	
						appear CDI. Ate 0 chow, did eat all forage &	
						readily took & ate fresh fruit & peanuts. Noted	
						normal amount of stool in pan. Suspect MMM	
						grazing. A: Poor app. for chow, fair app. for fresh	
						fruit & peanuts. P: CTM on OP & MH daily.	[redacted]
②	12/14/18		P/F	G	N	SO: BAR OPM: Cranial implant. + Re: PA.	
						Active & moving well. implant appears CDI.	
						Ate 1 chow, all forage & readily ate fresh	
						fruit. A: ~~P/F~~ Poor/Fair app. Stable implant.	
						P: CTM on OP & MH daily.	[redacted]
③	~~12/24/18~~		G	G	N	SO: BAR OPM: Cranial implant + Re: (L) implant	
						CDI, (R) implant suspect picking, no d/c seen	
						but skin appears pierced from implant.	
						A: Stable implant, (R) side possible picking, Good app	[redacted]
	12/24/18		G	G	N	SO: BAR OPM: Cranial implant; Not actively	
						picking implant. Implants CDI. Dried d/c	
						surrounding implant. Actively took treats	[redacted]
						SO2: BAR. Re: crusty mucus. Same entry as	
						above.	[redacted]

142 i.e. 12/22/18 [redacted] ③ RE [redacted] 12/24/18, Stable read 12/23/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/20/18	cont				(both bacterium susceptible both species)	[redacted]
MMU [redacted] F 10yrs 7mos 5.88kg NRL02						
Enrofloxacin 100 mg/mL 5.00 mg/kg Dose — 29 mg Total Dose						
0.29 mLs Volume — IM Rte — BID Freq — 14 Days Start 12-20-2018 End 01-02-2019						[redacted]
12/20/18					SO: Rec'd in [redacted] per wo# 3939 NRL02 Adm 0.50mL Ketamine IM given during recovery. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery	[redacted]
12/20/18		Fast ①	G	cc	SO: BAR. OPM: Cranial implant. Active and moving around cage well. Implants did not have any swelling, erythema or d/c @ margins. However, did have Staph + Enterobacter on culture. A: Cranial implant margins CDI, w/ infection P: Start enro, Monitor implant w/ weekly Propofol sedations	[redacted]
12/20/18 MMU [redacted] / 0.6 CC KET / D→ SURGERY W/O 3939 NRL02 WT: 6.96 CAGE TIME 11:05 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						[redacted]
② 12/19/18		6	6	N	SO: BAR OPM: Cranial implant + Pe: Head implant Note moist cloudy d/c green in color @ base of (R) implant. Other implant (L) + incision appear CDI.	[redacted]
③ 12/20/18					SO: BAR OPM: Cranial Implant. Active + moving well. Noted dry d/c @ base of (R) implan. (L) implant + incision appear CDI.	[redacted]

② RC [redacted] L.t. 12/22/18 [redacted].

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/17/18					Sl. erythema & thickening of skin @ crn aspect of the collar too. Obtained a culture & swab for slide prep/cytology cytology revealed sm # of PMNS w/ a few intra & extracellular cocci (gr +) probable localized staph inf. A: localized staph inf noted around (R) collar P: CTM closely clean & neuroredcding consider adding biopatch under collar (once lacuna appears) Consider CBC, Chem 20 &/or antibiotics if cond worsens await R/C	
12/18/18					SO: Decided to prophylactically or conservatively start AB Rx prior to the culture results since the skin was eroded P. Await culture results &/c skin resection 12/20 Consider labs @ the time	[redacted]
12/17/18		G	G	N	~~SO: Rx: Read other;~~	[redacted]
12/18/18		G	G	N	SO: BAR con: cranial implant, Rx: Read other; Noted mild crusting @ (R) implant, c+D. (L) implant has a small amount of serous d/c @ margin. Inc. CDI, noted occasional scratching @ (L) implant @ observation.	[redacted]
12/20/18					So: Micro Results 4+ Staph Coag +, 4+ Enterobacter sp A: Infection @ Cranial implant. P: Stop Cephalexin, Start enro due to Infection being susceptible to enro	

MMU [redacted] F
10yrs 7mos 5.88kg NRL02
Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 176 mg Total Dose
0.70 caps Volume — PO Rte — BID Freq — 14 Days
Start 12-18-2018 End 12-31-2018
switch to cefazolin if animal is not taking oral cefalexin

KLC C-115599 Ins18DEC@16:20 Prn18DEC@16:20

MMU [redacted] F
10yrs 7mos 5.88kg NRL02
Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 176 mg Total Dose
0.70 caps Volume — PO Rte — BID Freq — 3 Days
Start 12-18-2018 End 12-20-2018

2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/13/18					MMU [redacted] 0.6MLS KET, ~> SURGEY MV'D TO [redacted] MV# 18-_____	[redacted]
WT: 5.90					W/O 3795 NRL02	
CAGE TIME_____					15MIN____30MIN____45MIN____1HR____1.25HR____1.5HR____1.75HR____2HR____	
12/13/18					SO: Rec'd in [redacted] per wo#3795, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Glue and very mild exudate cleaned from implants.	[redacted]
					Gave additional 0.50mL Ket IM during recordings	[redacted]
					T=100.5, bilateral warmed, serous secretions around bilateral	[redacted]
12/13/18					D/c from [redacted] ⇒ [redacted]	[redacted]
12/14/18	5.80					
12/15/18		F	G	N	SO: BAR OPM: cranial implant. Re: cavity head, Inc. CDI: (L) implant margin CTD scabbed. (R) implant margin has 1 drop of clear fluid discharge. No blood seen, no swelling. No active picking/scratching seen. Animal active and readily ate treats. A: stable post cranial implants. P: ctm on OPM daily & as reported.	[redacted]
12/16/18		G	G	N	SO: BAR OPM: cranial implant. Re: head other: Noted mucoserosanguineous fluid @ (R) implant margin. (L) implant margin CTD scabbed. Inc. CDI. animal readily ate treats. NEPD, no scratching/picking observed. A: mucoserosanguineous fluid @ (R) implant margin w/ mild erythema. P: Per Vet, await project response, ctm daily	[redacted]
12/17/18		G	G	N	SO: BAR OPM cran implan re: head other – d/c around (R) ear – Noted a small amt of serous d/c @ the anolateral aspect. Caudal aspect is clean & healing well	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/7/18		G	G	N	SO: BAR Four cm of stool Animal	
					is recovering as well as could be	
					expected No deficits noted Incision	
					is CDI & healing well by 1st int	
					A: Excellent postop recovery	
					P: Cont supps & tx thru 12/9	
					Provide supportive care PRN	[redacted]
12/8/18		G	G	N	SO: BAR, active & moving well. Incision + implant	
					appear CDI. Appears to be using R+L arms/hands +	
					legs: WNL PS: 0.	[redacted]
12/9/18		F	G	N Pelleted	SO: BAR, 7 chow left in cage, ate fruit & veggies,	
					drank boost, bright & interactive, normal mentation,	
					sts CDI, implant appears to be intact, no discharge	
					or attention to implant, PS=0	[redacted]
12/10/18		G	G	N Pelleted	SO: BAR, head implants: CDI, mentation:	
					good, movement: very alert moves well	
					on perch, reluct to move off perch. MM	
					= Pink, PS = 0, mild bruising @ (R) axillary	
					1cm in diameter.	
					A: Stable post cranial implants	
					P: Discharge from post ob, CTM on MH	[redacted]
12/11/18		G	G	N	SO: BAR, Implants CDI, mentation: good,	
					aggressive, active. PS = 0, ate treats.	
					MM = Pink. NEPD.	[redacted]
12/12/18		G	G	N	SO: BAR, Implant: CDI, mvmt: good	[redacted]
12/13/18		Fast	G	N	SO: BAR, Implant CDI; mvmt WNL	[redacted]

Admit ⊘ Prob. Sheet ○

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/4/18					A: Excellent post op recovery Id from bilat cranial implant P: CTM closely & provide supportive care PRN Cont meds & supps as prescribed	[redacted]
12/4/18					8 pm: Animal was quiet this afternoon but when it quieted down animal started drinking (10ts of H_2O) and eating. Appears calm and alert WNL vocalizing	[redacted]
12/5/18		F	G	N	SO: BAR Fair amt of pellets eaten Animal is calm, alert, present, interactive w/ no discernable deficits. She ate dates, apples pears, cucumber & drank 10ts of H_2O from her water bottle. She moves around the cage well, often sits behind the feed bottles or mirror A: Cont. excellent post op recovery Incision healing by 1st int P: Cont all supps & Rx. Provide supportive care PRN encourage intake. Monitor closely	[redacted]
12/6/18		G	G	N	SO: BAR, VS: C+D, PS: O, ate all supps + ~ 200ml H_2O, normal movements around cage	[redacted]
12/7/18		G	G	N	SO: BAR, Implant in place w/ no swell, very alert and reactive, moving around cage and reaching for peanuts	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/3/18 (cont.)						

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Rice Cereal
Dose — Total Dose
Volume — PO Rte — BID Freq — 6 Days
Start 12-03-2018 End 12-08-2018
1602-1

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 7 Days
Start 12-03-2018 End 12-09-2018
1602-1

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 3 Days
Start 12-03-2018 End 12-05-2018
1602-1

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Prunes
Dose — Total Dose
Volume — PO Rte — SID Freq — 4 Days
Start 12-03-2018 End 12-06-2018
1602-1

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Water
1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte — SID Freq — 7 Days
Start 12-03-2018 End 12-09-2018
1602-1

[redacted]
10yrs 6mos 5.93kg NRL02

Boost
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 4 Days
Start 12-03-2018 End 12-06-2018
BOOST SOAKED CHOW PLEASE
1602-1

[redacted]

12/3/18

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Maropitant 10 mg/mL
1.00 mg/kg Dose — 5.9 mg Total Dose
0.60 mLs Volume — SC Rte — SID Freq — 5 Days
Start 12-03-2018 End 12-07-2018
first dose given by [redacted] 12/3

[redacted]

12/4/18 F G N SO: BAR animal is calm, present, alert & interacting well. She has eaten banana, apple, cucumber, prunes, dates & a little rice cereal (though doesn't appear to care for it much). Drank H_2O from the dixit's H_2O bottle. Moderate kool-aid & boost. Animal moves around the cage well, no deficits - often on perche behind bottles or up in corner behind mirror (likes to hide). CBC (12/3) WNL. Chem 20 (12/3 taken yesd 3x) Ca 8.6, T.P 5.7, Albumin 3.0. Fair amt of pelletty stool

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
11/8/18					SO: Transported to [redacted] for MRI, project NRL02 WO# 3431. Sedated with ketamine 0.6 mls, Animal was / was not placed in Stereotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage. Animal did/did not receive Ketoprofen 0.3mls or Buprenex IM	[redacted]

12/3/18 MMU [redacted] / 0.6 CC KET IM / D-> SURGERY W/O 3718 NRL02

WT: 5.82

CAGE TIME ____ 15MIN ____ 30MIN ____ 45MIN ____ 1HR ____ 1.25HR ____ 1.5HR ____ 1.75HR ____ 2HR ____

12/3/18

SO: Rec'd in [redacted] prep wo# 3718, project NRL02 Surgically prepped, performed cranial implants See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert.

A: cranial implants

P: POM X 7 days, Start RX

✓Charges ✓Admit ✓RX ✓Supps ✓Move Sheet ✓Surgery Log ✓Anesthesia Log ✓Surgery Report

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 148 mg Total Dose
0.40 mLs Volume — IM Rte — BID Freq — 7 Days
Start 12-03-2018 End 12-09-2018
AM dose given in Sx 12/3

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .18 mg Total Dose
0.60 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-03-2018 End 12-05-2018

Modified

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — .9 mg Total Dose
0.09 mLs Volume — IM Rte — TID Freq — 3 Days
Start 12-03-2018 End 12-05-2018
first dose given by SX 12/3 (ask for time)

5.93kg NRL02

Famotidine 10 mg/mL
0.50 mg/kg Dose — 3. mg Total Dose
0.30 mLs Volume — IM Rte — SID Freq — 7 Days
Start 12-02-2018 End 12-08-2018
Have dose 12/3 AM ready for p/u by Sx

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Levetiracetam 100 mg/mL
14.00 mg/kg Dose — 83 mg Total Dose
0.80 mLs Volume — PO Rte — BID Freq — 1 Day
Start 12-02-2018 End 12-02-2018
Dose Ovrd

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 178 mg Total Dose
1.80 mLs Volume — PO Rte — BID Freq — 5 Days
Start 12-03-2018 End 12-07-2018
Dose Ovrd | have dose ready 12/3 AM for Sx p/u

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 5.9 mg Total Dose
0.60 mLs Volume — IM Rte — SID Freq — 1 Day
Start 12-02-2018 End 12-02-2018
Dose Ovrd

MMU [redacted] F
10yrs 6mos 5.93kg NRL02

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 4.5 mg Total Dose
0.40 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-03-2018 End 12-05-2018
have dose ready 12/3 AM for Sx p/u

Dexamethasone 10 mg/mL
0.50 mg/kg Dose — 3. mg Total Dose
0.30 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-06-2018 End 12-07-2018
Dose Ovrd

Dexamethasone 10 mg/mL
0.25 mg/kg Dose — 1.5 mg Total Dose
0.15 mLs Volume — IM Rte — SID Freq — 1 Day
Start 12-08-2018 End 12-08-2018
Dose Ovrd

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/15/18	5.78				BOX WT	[redacted]
7/26/18 MMU [redacted] 0.7 MLS KET IM, D→6012 BCS = 2.0 TRN01 W/O 2270						[redacted]
WT: 5.80 CAGE TIME 12:20 15MIN 1 30MIN 2 45MIN 3 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___						
7/27/18		P	G	N	S: Bite, R: poor app ; Tolerated left in cage, ate, forage A: Suspect poor app is secondary to recent sedation P: CIM on routine MH	[redacted]
10/19/18	5.66				Ketamine used: 0.8 ml TB TEST (circle which eye): L (R) BCS:_____ Readings: 24HR ✓ 48HR ✓ 72HR ✓ Animal monitored through sedation recovery	[redacted]
10/19/18	5.93				**Cardiologist guided echocardiogram preformed due to: pre-shipment / pre-project / clinical / genetic** **Preliminary results: (await final results)** **Normal / Suspect** **Comment:**_____ Final Echo Result: LVH Negative	[redacted]
					10/19/18 MMU [redacted] 0.6 MLS KET, BLED 3ML, →1310, #3176	
					WT: 5.93 CAGE TIME_____ 15MIN___ 30MIN___ 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___	
10/19/18					X pre-project physical ___pre-shipment physical ___weaning physical ANIMAL MONITORED UNTIL RECOVERED See associated P.E. sheet for additional information.	[redacted]
11/8/18 MMU [redacted] / BOX LOAD TO TRANSPORT VAN / RETURN W/O 3431 NRL02 WT:						[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

451 – 457

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

NX

/ BZ59
I.D. PROJECT CODE

MMU [redacted]
ANIMAL I.D.

/ [redacted]
INVESTIGATOR REQUESTOR

3 / 15 / 19
DATE OF SAMPLE

ANIMAL DATA: ____ - ____
ROOM CAGE

F ____ YR ____ MO ____ KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA Head implant

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S)
① left under pill Box
② left over pill box
③ left dura under IC
④ left Brain under IC
⑤ Right under pill box
⑥ Right over pill box

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		3,5
☒ ANAEROBIC	5,6,7	1,2,3,4
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION
⑦ Right dura under IC
~~⑧ Right brain under IC~~

ORGANISMS IDENTIFIED

Aerobic:

1. ① Isolated from thio broth: Enterococcus sp.
2. ② Isolated from thio broth: Strep viridans
3. ④ Isolated from thio broth: Strep viridans
4. ⑥ It Enterococcus sp.
5. ⑦ Isolated from thio broth: Staph coagulase negative
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 3-22-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU[redacted] Home Room: [redacted] Date: 3/15/19
Wt (kg): 10.1 Age: 10 yrs Sex: M/F Procedure: Cranial explant ET Tube size: 5.0
Investigator: [redacted] W/O# 4986 Project: NR L02 IV Catheter Placement: R cph

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Atropine	0.50	SQ	8:45	N/A			

Fluid Type N/A **Additives**: N/A Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- 0, Sys-v, Dias-^, ETCO2-X, SPO2-√ S-sigh (if on Vent. put line through RR-O) MAP –

Ephys 8:55 End 9:20
5x STUN 9:30 end 9:57

Time:	8:54	9:00	9:14	9:35	9:48	10:00	10:18	10:30	10:46	10:56
Temp:										
160	164									
150		•								
140				•						
135			•		•					
130						•	•		•	•
125								•		
120										
115										
110										
105										
100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
95										
90										
85										
80										
75										
70										
65										
60										
55										
50	X									
45		X		X			X			
40			X		X	X		X	X	X
35										
30										
25										
20										
15	O	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
10										
SIGH	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluids total/rate	N/A - Terminal procedure									
CRI: N/A										
Iso FI (%)/ Oxygen (L)	3/2	2.4/2	1.8/2	2/2	1.9/2	1.9/2	1.8/2	1.8/2	1.7/2	1.8/2

Sample of

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium [redacted] mL **Initials:** [redacted]
① Time & route written in wrong boxes [redacted] 3/15/19

3666

☐ VIRAL PRECAUTION

B759 NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

MMU [redacted]
ANIMAL I.D.

3, 5, 19
DATE OF SAMPLE

1 SEX ____ YR ____ MO 6.18 KG
AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Infected on clindamycin x 3d

HOSPITALIZED NO ☒ YES ☐

PRIOR THERAPY ☒ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) cranial implant

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 3/7 lt STAPH Coagulase positive
2. 3/8 lt Enterococcus sp
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S	S		S		S

REPORTED BY: [redacted]

REPORT DATE: 3/7/19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

1084

☐ VIRAL PRECAUTION

B259, NR102
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

MMU [redacted]
ANIMAL I.D.

3/5/19
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F ____ YR ____ MO 6.18 KG
SEX AGE WEIGHT

PROCEDURE IS: ✓ DIAGNOSTIC AID: ____ COLONY MANAGEMENT: ____ EXPERIMENTAL: ____

CLINICAL SIGNS / PROBLEMS:
Purulent d/c

HOSPITALIZED NO ☒ YES ☐ ____ ROOM ____ CAGE

PRIOR THERAPY ☒ NO ☐ YES
LIST ALL AGENTS:

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anesthetized ☐ Other____

PROCEDURE(S) REQUESTED: Cytology + GRAM STAIN

SPECIMEN: Purulent.

RESULTS

Within a background of proteinaceous fluid and fibrin are moderate to large numbers of neutrophils with scattered foamy macrophages and epithelial cells, and rare eosinophils.
Gram stain reveals very rare extracellular Gm(+) coccoid bacteria forming short chains.

Conclusion: suppurative material / inflammation

[redacted] 3-5-19

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

336

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

B259, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

MMU [redacted]
ANIMAL I.D.

3 / 1 / 19
DATE OF SAMPLE

F
SEX

YR MO KG
AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) (R) Cranial Post

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 3/5 1+ STAPH Coagulase positive
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S	S		S		S

REPORTED BY: [redacted]

REPORT DATE: 3/5/19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

1038

☐ VIRAL PRECAUTION

B259, NRL42
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MPUU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

MISCELLANEOUS

3 / 1 / 19
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F ____YR ____MO ____KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: ____ COLONY MANAGEMENT: ____ EXPERIMENTAL: ____

CLINICAL SIGNS / PROBLEMS:	PRIOR THERAPY ☐ NO ☐ YES LIST ALL AGENTS:
cranial implant HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE	

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted ____hrs ☐ Anesthetized ☐ Other____

PROCEDURE(S) REQUESTED: (R) cranial Post / cytology

SPECIMEN:

RESULTS

Cytology - large numbers of neutrophils including degenerate neutrophils and band forms. Large numbers of bacteria - mostly extracellular - small coccoid bacteria in chains.

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

94

☐ VIRAL PRECAUTION

B259, NRU02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

1 / 18 / 19
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M
SEX

___ YR ___ MO
AGE

___ KG
WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ___ COLONY MANAGEMENT ___ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Implant dry blood
HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) Cranial implant

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 1+ Staph coagulase negative
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 1-22-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5848

☐ VIRAL PRECAUTION

B259, NRL02
I.D. PROJECT CODE

MMU [redacted]
ANIMAL I.D.

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

[redacted]
INVESTIGATOR REQUESTOR

12, 17, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 10 YR 7 MO 5.88 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID: ____ COLONY MANAGEMENT: ____ EXPERIMENTAL: X

CLINICAL SIGNS / PROBLEMS:	PRIOR THERAPY ☐ NO ☐ YES LIST ALL AGENTS:
run cytology HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE	gram+/gram−

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted ____hrs ☐ Anesthetized ☐ Other____

PROCEDURE(S) REQUESTED:

SPECIMEN (R) implant Connector

RESULTS

overall the sample has low cellularity, the cells present consist entirely of neutrophils. there are small numbers of extra- and intracellular cocci.

Gram stained slide shows slightly darker more blue bacteria most cosistent with Gram positive cocci.

Dx: neutrophilic exudate with intra- and extracellular Gram positive cocci

Such bacteria are concerning for staph

[redacted]

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

AMENDED REPORT – CHART COPY

2045

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

R259, NRL42
I.D. PROJECT CODE

MALL[redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

12, 17, 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F 12 YR 7 MO 5.85 KG
SEX AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID _____ COLONY MANAGEMENT X EXPERIMENTAL [redacted] 12-27-18

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
gram + / gram –

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) Head Rst Implant navicular

CULTURES REQUESTED	NEGATIVE RESULT		DIRECT MICROSCOPIC EXAMINATION
	NEGATIVE	NO GROWTH	
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA			
☐ CAMPYLOBACTER			
☐ YERSINIA (CLINICAL)			
☐ AEROBIC			
☐ ANAEROBIC	✓	[redacted] 12-27-18	
☐ FUNGI/YEAST			
☐ LISTERIA			
☐ OTHER			

ORGANISMS IDENTIFIED

1. 12/19 4+ Staph Coagulase positive
2. 12/19 4+ Enterobacter sp.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S	S		S		S
2	S	R		S	S	S		S	

REPORTED BY: [redacted]

REPORT DATE: 12/19/18

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

2045

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

B259, NRLQ2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

MMU [redacted]
ANIMAL I.D.

12, 17, 18
DATE OF SAMPLE

F 10 YR 7 MO 5.88 KG
SEX AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID _____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
gram + / gram −

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) Cranial Head Post-Implant

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 12/19 4+ Staph coagulase positive
2. 12/19 4+ Enterobacter sp.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S	S		S		S
2	S	R		S	S	S		S	

REPORTED BY: [redacted]

REPORT DATE: 12/19/18

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

39281 NRL02

[redacted]

Mon 12/17/2018 3:34 PM

To: [redacted]

Cc: [redacted]

Hey everyone,

The cytology taken from the right implant connector had small numbers of neutrophils with few intra- and extracellular cocci. The Gram stain was not great (poor overall staining), but I am convinced they are Gram positive. These bacteria likely represent a localized Staph infection.

The report will be finalized later today.

[redacted]
Senior Veterinary Pathologist
California National Primate Research Center, UC Davis
Office: [redacted]

Post-operative monitoring record

Date: 12/3/18 Animal# [redacted] Procedure: Cranial implants

			Date	Date	Date	Date	Date	Date	Date
General Obervations			12/4	12/5	12/6	12/7	12/8/18	12/9/18	12/10/18
	Appetite		F	F	G	G	G	F	G
	Hydration		G	G	G	G	G	G	G
	Stool		N	N	N	N	N	N/pulled	N/pulled
	Incision		CDI	CDI	CDI	CDI	CDI	CDI	CDI
		Score							
Physiologic parameters									
Pupils									
	Normal	0	0	0	0	0			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	0	0	0	0			
	Tachypnea	2							
Mucous membranes									
	Pink	0	0	0	0	0			
	Pale	2							
Posture									
	Sitting/standing upright	0	0	0	0	0			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0	0	0	0	0			
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0	0	0	0				
	Lack of vocalization	0				0			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score		0	0	0	0	0			
Initials:			[redacted]						

revised 7/2017

5629

BZ59 / NRL02
I.D. / PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR / REQUESTOR

12 / 3 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM / CAGE

F / 10 YR / 6 MO / 5.93 KG
SEX / AGE / WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-SX

HOSPITALIZED ☐ NO ☒ YES [redacted]
ROOM / CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	12.2	X 10 ^3/ µl
RBC	6.72	X 10 ^6/ µl
HEMOGLOBIN	14.8	gm/dl
HEMATOCRIT	46.3	%
MCV	69	fl
MCH	22.0	pg
MCHC	31.9	pg/fl
PLATELETS	2.79	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 8.6 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 12.2 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	51	6222
LYMPHOCYTES	42	5124
MONOCYTES	5	610
EOSINOPHILS	2	244
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

12/3/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 12/3/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2456

☐ VIRAL PRECAUTION

BZ59, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

mmu [redacted]
ANIMAL I.D.

12, 3, 18
DATE OF SAMPLE

F 10 YR 6 MO 5.82 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
pre-SX

HOSPITALIZED NO☐ YES X [redacted]
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED X ____ HOURS COMMENTS: ____

SAMPLE: SERUM X HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	152	mM/L	15		CPK (S,HP)	226	U/L	25		pH		
2		POTASSIUM (S,HP)	3.8	mM/L	16		ALK PHOS (S,HP)	117	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	115	mM/L	17		GGT (S,HP)	36	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	28	mM/L	18		LDH (S,HP)	159	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	13		19		CHOLESTEROL (S,HP)	112	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.6	mg/dl	20		TRIGLYCERIDE (S,HP)	34	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	8.6	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	59	mg/dl	24		hsCRP	0	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	5.7	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.0	g/dl										
13		ALT (S,HP)	31	U/L										
14		AST (S,HP)	20	U/L										

REPORTED BY [redacted] DATE: 12/3/18

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP MMU ID# [redacted]	DATE OF EVENT MO DAY YR 12/3/18

PROCEDURE: Cranial Implant	ROOM: [redacted]	AGE: 10 yr 6m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: F
REQUESTOR: [redacted]	W/0: 3718	WT: 5.93 kg

SNOMED CODES	CODED BY: cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, fentanyl and propofol, the animal's head was placed into the stereotaxic frame. The head was sterilely prepped. Midline incision made approximately 6cm in length. Fascia incised and temporalis muscle elevated bilaterally from temporal ridges. Fifteen millimeters anterolateral to bregma, burr holes were made bilaterally using a cranial perforator. Exposed dura was incised and reflected anteriorly. Electrode implants were placed using investigational robotics. Gelfoam and titanium plate were used to seal burr hole. This process was repeated on the right hemisphere. Two separate stab incisions were made 1.5cm off midline in the posterior portion of the exposure and transcutaneous ports were passed through the incision. The main midline incision was closed in an inverted, interrupted fashion using 3-0 vicryl in the fascia. The skin was closed using a running subcuticular stich using 4-0 monocryl. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss; minimal (<2cc).

TIME IN: 836 TIME OUT: 208	POST OPERATIVE CARE: Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days Dexamethasone SID x7 days Cefazolin BID x7 days Omeprazole SID x7 days Famotidine SID x3 days Levetiracetam BID x7 days

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center: Anesthesia Monitoring Sheet *Page* 1 *of* 1

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 12/3/18 **Age:** 10y 6m **Sex:** M / (F) **Wt. (Kg)** 5.82

Procedure: Cranial implant **ET Tube Size:** 5.0 **Investigator:** [redacted] **W/O#:** 3718 **Project/ID:** NRL02/ [redacted]

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – ▽, Dias – ▲

Dexmethasone 0.40mL IM @ 8:20am
Ketamine 0.40mL IV @ 8:20am

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Atropine	0.5 mL	IM	822	Cefazolin	0.40mL	IV	837, 1031, 1232, 2237
Famotidine	0.30mL	IM	820	Hydromorphone	0.09mL	IM	123
Levetiracetam	1.8mL	PO	820				

Del: 810 Sx Table: 820 Prep: 830 Start: 830 Cut: 845 Proc: 948 - 128 Close: 134 - 208 Full Recovery: 2145

Time	815	845	900	915	930	945	1000	1015	1030	1045	1100	1115	1130	1145	1200	1215	1230	1245	100	107	115	130	145	200	215	230
Temp	98.5	97.4	97.1	97.7	98.7	99.1	99.1	98.8	98.4	98.0	97.7	97.4	98.4	98.9	98.9	98.3	98.0	98.3	98.0	97.9	97.9	98.0	98.1	98.2	98.4	98.4
150	152																									
140																										
130																										
120																										
110																										
100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
90																				▼						
80	▼			▼	▼	▼	▼	▼	▼	▼	▼	▼	▼		▼	▼	▼				▼	▼	▼	▼	▼	
70		▼	▼											▼				▼	▼							
60																										▼
55				—	—	—													—				—	—	—	
50							—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—			
45	×	—	—									—					—									
40	—	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	▲	×	×	×		×	×	×
35				▲	▲						▲				▲	▲		▲					×	▲		×
30		▲				▲	▲	▲	▲	▲	▲	▲	▲	▲			▲			▲	▲	▲	▲		▲	
25																										
20	▲		▲																							
15	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	▲
10																										
Sigh																										
Fluids: LRS Total/Rate	35 / 50	226 / 100	364 / 60	557 / 60	673 / 60	817 / 60	95 / 60	111 / 60	126 / 60	150 / 60	175 / 60	189 / 60	207 / 60	224 / 60	240 / 60	252 / 60	266 / 60	280 / 60	295 / 60	303 / 60	310 / 60	325 / 60	340 / 60	354 / 60	371 / 60	387 / 60
CRI: Fentanyl Total/Rate	3.0 / 5	3.5 / 5	2.3 / 5	4.1 / 5	5.2 / 5	6.5 / 5	7.9 / 5	8.9 / 5	10.1 / 5	11.4 / 5	12.7 / 5	13.9 / 5	15.3 / 5	16.2 / 5	18.1 / 5	17.1 / 5	20.2 / 5	21.4 / 5	22.7 / 5	23.3 / 5	Turned off @ 1:07PM					
Iso Fl (%) / O^2 (L)	2.3 / 2	1.6 / 2	1.5 / 2	1.5 / 2	1.5 / 2	1.5 / 2	1.4 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.7 / 1.5

Compressed

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) ① Iso Fl 1.4% ? O_2 1.5 [redacted] 12/3/18 ***Initials*** [redacted] rev.7/15-PC15A

23-01594_000277

UCD 0240

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 11/8/18
Wt (kg): 5.93 Age: 10yr Sex: M/F Procedure: MRI · Skyra ET Tube size: 5mm
Investigator: [redacted] W/O# 3431 Project: NR102 IV Catheter Placement: Ø

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.6ml/5	IM	8:15a				
Ketoprofen	0.3ml/5	IM	8:30a				

Fluid Type Ø **Additives**: Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR-**0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP –

Time:	8:30a	8:45a	9:00
Temp:			
160			
150			
140	140		
135			
130		132	131
125			
120			
115			
110			
105			
100			
95	✓	✓	✓
90			
85			
80			
75			
70			
65			
60			
55			
50	X	X	X
45			
40			
35			
30			
25			
20			
15			
10	O	O	O
SIGH			
Fluids total/rate	N/A		
CRI: N/A			
Iso FI (%)/ Oxygen (L)	1.7%/1.0L	1.7%/1.0L	1.7%/1.0L

Complete Recovery @ 9:25a

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials [redacted]

Physical Exam Certificate
California National Primate Research Center

3781-53

Animal number: MMU [redacted] Location: [redacted] Date of exam: 10/19/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: NRL02

Negative TB Test Date: 10/5/18

Physical exam findings: (to be completed by Veterinary staff)

Weight: 5.93 Temp: 98.8 HR: 120 RR: 30 BCS: 2.0 Gender: M (F) Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	NAO	(A)	NE	Missing multiple digits both hands, R foot
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	Rectal palpation WNL

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 10/19/18 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Multiple traumas, resolved

Laboratory Results ~~and review~~: (to be completed by Research Services or Veterinary staff)

Date: 10/19/18 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: WNL

Imaging studies: (to be completed by Veterinary staff)

Date: 10/19/18 Radiographs: U/S exam: Echo

Comments: final results pending Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

X Approved for project Comments:

____ Approved for project pending lab review

____ Approved for shipment

____ Stable weanling

____ Other

Examining Veterinarian: [redacted] Date: 10/22/18

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

5073

B259 / NRLØ2
I.D. / PROJECT CODE

[redacted] / [redacted]
INVESTIGATOR / REQUESTOR

ANIMAL DAT[redacted]
ROOM / CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

10 / 19 / 18
DATE OF SAMPLE

F 10 YR 5 MO 5.66 KG
SEX / AGE / WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐NO ☐YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	8.3	X 10 ^3/ µl
RBC	5.73	X 10 ^6/ µl
HEMOGLOBIN	12.5	gm/dl
HEMATOCRIT	39.6	%
MCV	69	fl
MCH	21.9	pg
MCHC	31.6	pg/fl
PLATELETS	1.90	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.3 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 8.3 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	31	2573
LYMPHOCYTES	59	4897
MONOCYTES	6	498
EOSINOPHILS	4	332
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

[redacted] 10-19-18

[redacted] 10-19-18

REPORTED BY: [redacted]

REPORT DATE: 10-19-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2197

☐ VIRAL PRECAUTION

B259, NRLD2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

10, 19, 18
DATE OF SAMPLE

F 10 YR 5 MO 5.66 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☒ [redacted] ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	135	mM/L	15		CPK (S,HP)	135	U/L	25		pH		
2		POTASSIUM (S,HP)	3.3	mM/L	16		ALK PHOS (S,HP)	122	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	100	mM/L	17		GGT (S,HP)	47	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	21	mM/L	18		LDH (S,HP)	203	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	17		19		CHOLESTEROL (S,HP)	147	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.6	mg/dl	20		TRIGLYCERIDE (S,HP)	51	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.1	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	74	mg/dl	24		hsCRP	0	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.1	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.1	g/dl										
13		ALT (S,HP)	31	U/L										
14		AST (S,HP)	21	U/L										

REPORTED BY [redacted] DATE: 10/19/18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊕	Hydration (G, F, P) ⊕	Stool (N, SS, L, B) ⊕	Observations	Initials
7/27/18					F (lent) Encourage intake CTM until animal goes home or project endpt 7/31	[redacted]
7/27/18		G	G	N	SO: BAR Not eating PBS, ate supps + most chow. No evidence of picking sts, or of sz activity; no vaginal discharge. Cranial sites clean + dry w/scabs.	[redacted]
7/27/18					SO: no seizures noted this afternoon	
					P: per proj staff + DVM - DC to [redacted] this afternoon, admit to OR	
					Admit ⊕ Prob. Sheet ⊕	
7/27/18					DC → [redacted]	[redacted]
7/28/18		G	G	N	SO: OPM: cranial implant. MMU BAR, moving well and active. Cranial sts appear CDI w/ scabs present. NEPD.	[redacted]
7-29-18		G	G	CC	SO: BAR OP: Cranial implant; Animal very Active with NEPD. Sts CDI. Animal stable	[redacted]
7/30/18		KOS	G	N	SO: BAR OP: cranial implant; animal is bright, aggressing at cage front, incision is mildly scabbed, very mild erythema, no swelling, normal mentation A: stable post cranial implant P: CTM on OPM	[redacted]
7/ 31/18 WT: 6.36					MMU [redacted], 0.7 MLS KET IM, → NX, W.O. 2301	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
7/25/18		G/F	G	N	SO: BAR, ate supps; no picking at incision or seizures noted.	[redacted]
7/25/18					SO2: afternoon obs - no picking/pulling at sutures, small scab noted @ incision, sitting quietly on perch bar. Offered fruit/veggies & fig newtons. Readily began eating bananas.	[redacted]
						[redacted]
7/26/18					SO: BAR Incision CD - almost all intact. Animal is no longer picking @ her incision. Appetite is good, good amt of stool. A: Cranial incision is healing well by 1st & 2nd int / on valium to ↓ picking. P: CTM, Offer supps to encourage intake. Monitor in NO until finished w/ valium tx (7/26)	[redacted]
7/26/18		G/F	G	N	SO: BAR Didn't eat PBS, ate other supps + some chow. Cranial SS CDI, no evidence of picking or seizures, no vag d/c. A: Cranial incision is healing well by 1st & 2nd int. P: See above	[redacted]
7/27/18		G/F	G	N	SO: BAR - Not eating PBS - ate most other supps & chow. Fair amt of stool. A: Cranial incision is healing v well. P: Monitor for poss seizures today	

MMU [redacted] F
7yrs 3mos 6.46kg NRL02

Fruit + Veggies

Dose — Total Dose

Volume — PO Rte — SID Freq — 7 Days

Start 07-25-2018 End 07-31-2018

Fig Newton

2.00 bar/animal Dose — 2. Bar Total Dose

2.00 Bar Volume — PO Rte — SID Freq — 7 Days

Start 07-25-2018 End 07-31-2018

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/23/18					P(cont) Animal can be discharged	
					to home cage	[redacted]
7/24/18		G	G	N	SO: BAR, didn't eat supp, ate 4/7 chow &	
					forage; Alt CDI, MM pink, PS=0	[redacted]
7/24/18					SO2: Animal noted to be picking at head incision	
					by SPA / project staff. Skin appears to be unaffected	
					only slightly (e anterior aspect of incision.	
					Difficult to see posterior incision well as animal	
					is very active in cg. Contacted DVM - instructed to	
					give a single dose Midazolam IM (0.65 mg) @ 12:45pm	[redacted]
7/24/18		G	G	N	SO: BAR 4:30pm Mod can eat CDI /	
					hydrating though the 1st cut is gone &	
					there is a sm scab from where the	
					incision has opened slightly (though	
					hydrating). Animal seemed to respond/calm	
					response to the midazolam so	
					elected to start animal on oral	
					diazepam which may also be	
					a good transition off Keppra	
					A: Good/stable post op recovery	
					P: Cont supp, consider d/c IND	
					PBS if animal is not eating it.	
					Kwicks to monitor in HO @ least	
					the 1st day or 2 off Keppra	
					(for possible seizures)	[redacted]
					SO3: Animal was reported for white	
					vag d/c - unable to visualize well	
					of vag @ this time.	[redacted]

MMU [redacted] F
7yrs 3mos 6.46kg NRL02

Diazepam 5 mg/tablet
0.50 mg/kg Dose — 3.2 mg Total Dose

0.60 tabs Volume — PO Rte — BID Freq — 3 Days
Start 07-24-2018 — End 07-26-2018

[redacted] C-107898 Ins24JUL16:42 Prn24JUL16:42

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊕	Hydration (G, F, P) ⊕	Stool (N, SS, L, B) ⊕	Observations	Initials
7/19/18					Decline in stool quality, pass (non AB Rx)	
MMU [redacted] F 7yrs 3mos 6.46kg NRL02 Probiotic Sandwich 1.00 sndwch/animal Dose — 1. sndwch Total Dose 1.00 sndwch Volume — PO Rte — BID Freq — 10 Days Start 07-19-2018 End 07-28-2018					P: Cont supps & tx (omeprazole 7/23) cef (7/23) Keppra (7/24) Buprenex (7/19) famotidine (7/19), Keto (7/21) & PBS for chamber of mucus response CTM on PO	[redacted]
[redacted] C-101668 Ins19JUL209:53 Prn19JUL209:53						
7/20/18		F	G	SS	SO: BAR, ate fruit & veggies & 1/4 Kool-Aid. Did not eat R/C or chow. active in cg, mm pink; PS = 0	[redacted]
					A: Stable after good post op recovery	
					Incision is healing well by 1st int ⊕	
					P: See 7/19	[redacted]
7-21-18		P	G	N	SO: BAR - Animal active, Ate fruits and veggies, prunes. did not eat R/C, PBS or Kool Aid.	[redacted]
7-22-18		P	G	N	SO: BAR - Did not eat chow or supps.	
					Incision CDI, NO: Erythema, bruising or swelling	
					noted. mm = pink, PS = ⊘	[redacted]
7/23/18		F	G	N	SO: BAR, Didn't eat supps; ate scratch & some	
MMU [redacted] F 7yrs 3mos 6.46kg NRL02 Peanuts 1.00 serving/animal Dose — 1. serving Total Dose 1.00 serving Volume — PO Rte — SID Freq — 7 Days Start 07-23-2018 End 07-29-2018					chow. PS = 0 ; SS CDT	[redacted]
					A: variable appetite post cranial implant Sx	
					P: cont PO, begin additional supps, vet assess	
					to relocate to homecage. this wk	[redacted]
7/23/18		M	G	N	SO: BAR Animal ate lots of supps	
					in addn to 1 chow Good amt of stool	
					under her cage A: Stable/good post op &	
					recovery P: cont supps & tx (omeprazole ends today)	
					(Keppra ends 7/24) & PBS ends 7/28	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/18/18					occasionally P: CTM closely	
					use sx checklists to consider	
					tx if any problems & drug dosages	[redacted]
7/18/18					SO: Animal was reported for rub	
					(R) pupil, lazy (R) eye w/ mild conjunctivitis	
					& licking the cage bars. Confirmed	
					mild bilateral conjunctivitis,	
					equal sized pupils, possible ↓	
					swelling of (R) lat lower ocular ridge	
					and food on the cage that the	
					animal may have been licking	
					P: See above	[redacted]
					CBC (7-17-18): WBC = 1.5 X 10³/ul, Ht: 37.8, MCV = 81,	
					PT = 8.3 mg/dl, fibrinogen = 500 mg/dl ⇒ leukopenia	
					↑ fibrinogen (dexamethasone pre-med?!)	
					Chem 20 (7-17-18): Na⁺ 150, K⁺: 3.6, BUN = 21, Creat.	
					0.9, glu = 54, Alb: 4.6, ALT = 60, AST = 53, CRP = 1	
					⇒ WNL	[redacted]
7/19/18		F	6	SS	SO: BAR Didn't eat rice cereal, drank most OKT, ate peanuts	
					+ prunes. Didn't eat chow. Animal is active, moving	
					around cage well. mm pink, pupils WNL. ps = 0. Sutures	
					CDI	[redacted]
7/19/18		F	6	SS	SO: BAR Pupils equal size, conjunctival	
					erythema resolving, along w/ poss	
					(R) lat, lower orbital ridge swelling	
					No itching obs. Normal activity	
					Animal vomitted this am	
					A: Cont good post op recovery	
					Incision is healing well. Normal activity	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 7

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
7/17/18						

MMU [redacted] F
7yrs 3mos 7.10kg NRL02
Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1.1 mg Total Dose
0.11 mLs Volume — IM Rte — TID Freq — 1 Days
Start 07-17-2018 End 07-17-2018
Ended | GIVE Q4h (PLS chk w/ sx tech 1st)
[redacted] C-107509 Upd17JUL819:15 Prn17JUL819:16

MMU [redacted] F
7yrs 3mos 7.10kg NRL02
Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .21 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 1 Days
Start 07-17-2018 End 07-17-2018
Ended | GIVE as pm dose ONLY (chk w/ sx tech 1st pls)
[redacted] C-107510 Upd17JUL819:15 Prn17JUL819:16

MMU [redacted] F
7yrs 3mos 6.46kg NRL02
Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .19 mg Total Dose
0.60 mLs Volume — IM Rte — BID Freq — 2 Days
Start 07-18-2018 End 07-19-2018
[redacted] C-107578 Ins17JUL819:15 Prn17JUL819:16

Animal had 1/p rectal @ incision, dexamethasone, & it was a relatively invasive small surgery so elected to switch from hydromorphone to buprenorphine analgesia so the animal would not be so groggy. Also did not place urinary catheter as sx was only s/c for ~3 hrs.

7/17/18 — 8pm 1/4 tab of levetiracetam given PO.

7/18/18

MMU [redacted] F
7yrs 3mos 6.46kg NRL02
Prunes
Dose — Total Dose
Volume — PO Rte — SID Freq — 4 Days
Start 07-18-2018 End 07-21-2018
Volume — PO Rte — BID Freq — 6 Days
Start 07-18-2018 End 07-23-2018

MMU [redacted] F
7yrs 3mos 6.46kg NRL02
Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 4 Days
Start 07-18-2018 End 07-21-2018

MMU [redacted] F
7yrs 3mos 6.46kg NRL02
Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 6 Days
Start 07-18-2018 End 07-23-2018

7/18/18		P	G	N	SO: BAR, AFC CDI; recently offered supps this am - animal has not yet eaten them. Drank ~100 mls OAT; PS = P. A: Good post op recovery. Incision is CDI. No action needed other than potentially rubbing or shielding.

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 6

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
7.16.18					MOVED TO [redacted] PER REQUEST	[redacted]
7/17/18 MMU [redacted] 0.7 MLS KET IM, ~> SURGERY W/O 2127 NRL02						
WT: 6.46 CAGE TIME____15MIN___30MIN___45MIN___1HR___1.25HR___1.5HR___1.75HR___2HR___						[redacted]
7/17/18					SO: Elected to give 7 mg/kg (pediatric dose) of Keppra IV over 15 min (listed as 40 in protocol) Gave 2nd dose of dex (1 mg/kg) @ end of sx	[redacted]
7/17/18					SO: Rec'd in [redacted] prep wo# 2127, project NRL02 Surgically prepped, performed cranial implant See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert. A: cranial implant P: POM X 7 days, Start RX	[redacted]

✓ Charges ✓ Admit ✓ RX NA Supps NA Move Sheet
✓ Surgery Log ✓ Anesthesia Log ✓ Surgery Report

MMU [redacted] F
7yrs 3mos 7.10kg NRL02

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 7.1 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 3 Days
Start 07-16-2018 End 07-18-2018
Dose Ovrd | sx tech to give in AM on 7/17
10.00 mg/animal Dose — 10. mg Total Dose
0.50 caps Volume — PO Rte — SID Freq — 7 Days
Start 07-17-2018 End 07-23-2018
sx tech gave 7/17
Dose — Total Dose
0.36 mLs Volume — IM Rte — SID Freq — 3 Days
Start 07-17-2018 End 07-19-2018
Dose — Total Dose
0.50 mLs Volume — IM Rte — BID Freq — 7 Days
Start 07-17-2018 End 07-23-2018

MMU [redacted] F
7yrs 3mos 7.10kg NRL02

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1.1 mg Total Dose
0.11 mLs Volume — IM Rte — TID Freq — 3 Days
Start 07-17-2018 End 07-19-2018
GIVE Q4h (PLS chk w/ sx tech
0.70 mLs Volume — IM Rte — SID Freq — 3 Days
Start 07-17-2018 End 07-19-2018
GIVE as pm dose ONLY (chk w/ sx tech 1st pls)

MMU [redacted] F
7yrs 3mos 7.10kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 36 mg Total Dose
0.36 mLs Volume — IM Rte — SID Freq — 3 Days
Start 07-19-2018 End 07-21-2018
Modified
Modified | DO NOT GIVE IF ON DEXMETHAZONE

MMU [redacted] F
7yrs 3mos 6.46kg NRL02

Levetiracetam 250 mg/table
10.00 mg/kg Dose — 65 mg Total Dose
0.26 tabs Volume — PO Rte — BID Freq — 7 Days
Start 07-18-2018 End 07-24-2018

Animal was reported for 30 s seizure @ 30-45 min post op (NO precipitating signs were noted) Admin 0.65 mls valium IV, animal was calm & relaxed afterwards. Animal became more alert & active over the next 3-4 hrs. Ate a banana, some KC, pretzels & drank ORT unassisted @ 1:07. In good post op recovery throughout night. Monitor closely [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted] **California National Primate Research Center** Page # 5

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/23/18	cont				P: CTM MH	[redacted]
2/24/18		P/F	G	N	SO: BAR (P) Re: Poor appetite. MMH ate 1 chow	
					+ 1 boostbar + figs, banana & apricot. A: Poor	
					appetite for chow, fair appetite for supps.	
					P: CTM on MH.	[redacted]
3/9/18	6.50					[redacted]
3/23/18	6.7					[redacted]
4/6/18	6.65				O: Acute; Bled 3a SB; TB TEST (LEFT EYE) RIGHT EYE 24HR___ 48HR___ 72HR___	
					ANIMAL MONITORED	
					UNTIL RECOVERED	[redacted]
4/7/18		G	G	N	SO: BAR Re: Poor App (7 chow) Animal	
					actively eating chow, Normal	
					adequate stool.	
					A: Good appetite P: CTM on MH	[redacted]
4/17/18		G	G	N	SO: BAR (P) Re: (R) side eye red. Noted mild erythema	
					around (R) eye, no abrasion or trauma noted.	
					A: Mild erythema around (R) eye. No tx needed @	
					this time. P: CTM on MH.	[redacted]
4/20/18	7.2					[redacted]
5/4/18	7.1					[redacted]
5/18/18	7.0					[redacted]
6/1/18	6.7					[redacted]
6/28/18		G	G	N	SO: BAR (P) Re: vomit; lab making chow dirty for training	
					purposes. Vomit on floor is dirty.	
					A: unconfirmed emesis report	
					P: CTM on MH	[redacted]
6/29/18	7.0					[redacted]
7/13/18	7.1					[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/14/18	CONT.				was just paired and moved into Room.	
					Ate grapes, zuccini, bannana, oranges.	
					On Room supplement program due to	
					training.	
					A: Poor Appetite for chow, good appetite	
					for supp) 2nd recent report	
					P: CTM on MH	[redacted]
2/17/18		F	G	N	SO: BAR (P) RC: Poor appetite MMU on special	
					feeding schedule, no chow in cage. Per feeding	
					chart MMU ate 7 chow + fresh fruits & veggies.	
					A: Fair appetite. P: CTM on MH.	[redacted]
2/18/18		?	G	CC	SO: BAR, paired RC: poor app & unable to assess	
					appetite due to recent cage cleaning, animal	
					is bright and interactive A: possible poor app,	
					recent move P: CTM	[redacted]
2/19/18		F	G	N	SO: BAR RC: poor app >10. offered ~~at~~ snow peas, 1/8 apple,	
					1/4 banana + 1/4 cucumber — ate all readily. Noted bin	
					of food reward/treats in anteroom as well - atypical	
					feeding schedule + items A: ↓ appetite for chow suspected	
					P: CTM; re✓ wt if indicated	[redacted]
2/23/18	6.6				Box weight	[redacted]
2/23/18			G	CL	SO: BAR (P) RC: Poor App (10 chow).	
					Animal ate 1 chow, ate bars	
					Ate bannana, apricot. Very active.	
					Animal is recieveing treats per chair	
					training staff. NO stool in exercise	
					pen clean cage.	
					A: Fair Appetite w/slight weight decrease	

① [redacted] 2/19/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations; Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 3

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
7/21/17					ANIMAL MONITORED UNTIL RECOVERED	[redacted]
8/17/17	6.27				Box wt	
9-6-17	6.33				Box wt	
9-28-17	6.08				[redacted] **9/28/2017**	
					Dr. mls Ket. BCS= 2 Tartar 0 1 2 3 4 Teeth Scaled Y/N	
					TB Test R L Eye 24hr — 48hr — 72hr —	
					Moved → [redacted] ANIMAL MONITORED UNTIL RECOVERED	[redacted]
					MMU # 17-613	
10-16-17					moved → [redacted] per MMU# 17-669.	[redacted]
10/31/17	6.50				B. wt	[redacted]
1-4-18	6.78				Box wt	[redacted]
1/11/18	MMU [redacted] / 0.7 MLS KET IM, BLED 3 MLS, D→1302 WO#4359 NRL02					
WT:	CAGE TIME: 9/20 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75 ___ 2HR ___					[redacted]
1/11/18	6.87				X pre-project physical __pre-shipment physical __weaning physical	
					See associated P.E. sheet for additional information.	[redacted]
1-19-18					moved → [redacted]	[redacted]
2-6-18	7.00				Box wt	
2/13/18					Moved → [redacted] per MMU # 18-099	[redacted]
2/14/18		P	G	CC	SO: BAR Re: Poor appetite. Ate 0 chow, suspect decreased appetite is due to room change (move) A: Poor appetite. P: CTM on MH.	[redacted]
2/16/18		P/G	G	N	SO: BAR, (P) Re: Poor App (10 chow) Animal had 10 chow in cage. Normal and regular stool	

① Year should read as 17. [redacted] 7/21/17

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Post Operative monitoring record

Date: 7/17/18 Animal# [redacted] Procedure: cranial implant

			Date	Date	Date	Date	Date	Date	Date
General Obervations			7/18/18	7/19/18	7/20/18	7-21-18	7-22-18	7/23/18	7/24/18
	Appetite		pl	F	F+	P	P	F	G
	Hydration		G	G	G	G	G	G	G
	Stool		N	SS	SS	NO	NO	N	N
	Incision		CDI	CDI	CDI	CDI	CDI	CDI	CDI
		Score						[redacted]	
Physiologic parameters									
Pupils									
	Normal	0	0	0	0	0			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	0	0	0	0			
	Tachypnea	2							
Mucous membranes									
	Pink	0	0	0	0	0			
	Pale	2							
Posture									
	Sitting/standing upright	0	0	0	0	0			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0	0	0	0	0			
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	0	0	0	0			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score			0	0	0	0			
Initials:			[redacted]						

revised 7/2017

Sample Profile

CALIFORNIA NATIONAL PRIMATE RESEARCH CE

[redacted]

DAVIS, CA 95616-8542

7/17/2018 11:53 AM

CCX::16

PATIENT INFORMATION

PATIENT ID [redacted]

PATIENT LOCATION

DATE OF BIRTH

AGE

SEX

DIAGNOSIS

SAMPLE INFORMATION

Time Analyzed	7/17/2018 11:51 AM
SAMPLE TYPE	Adult Rhesus
PAT. TEMP. °C	37.0
FIO2%	20.9
BAROMETER:	757.08 mmHg
Analyzed by:	novaservice
Released by:	auto

Errors

Comments

Test	Results	Units	Test Ranges Low	High	Flags
BLOOD GAS					
pH	7.491		6.500	8.000	
pCO2	25.7	mmHg	3.0	200.0	
pO2	557.9	mmHg	0.0	800.0	
SO2%	99.7		30.0	100.0	
Hct	32	%	12	70	
Hb	10.6	g/dL	4.0	24.0	
pHTC	7.491		6.500	8.000	
pCO2TC	25.7	mmHg	3.0	200.0	
pO2TC	557.9	mmHg	0.0	800.0	
CALCULATED					
A	118.0	mmHg			
HCO3-	19.8	mmol/L			
BEecf	-3.8	mmol/L			
BEb	-1.9	mmol/L			
O2Ct	16.5	mL/dL			
O2Cap	14.8	mL/dL			
SBC	22.9	mmol/L			
CHEMISTRY					
Na+	152.0	mmol/L	80.0	200.0	
K+	4.04	mmol/L	1.00	20.00	
Cl-	118.2	mmol/L	50.0	200.0	
Ca++	1.17	mmol/L	0.10	2.70	
Mg++	0.81	mmol/L	0.10	1.50	
Glu	74	mg/dL	15	500	
Lac	0.8	mmol/L	0.3	20.0	
BUN	18	mg/dL	3	100	
Creat	0.8	mg/dL	0.2	20.0	
CALCULATED CHEMISTRY					
TCO2	20.6	mmol/L			
Gap	13.9	mmol/L			
Ca/Mg	1.4	mol/mol			
nCa	1.23	mmol/L			
nMg	0.83	mmol/L			
Osm	302.3	mOsm/kg			
BUN/Cre	22.4	mg/mg			

Reported by Time:

Notes

Time Analyzed	7/17/2018 08:36 AM
SAMPLE TYPE	Adult Rhesus
PAT. TEMP. °C	37.0
FIO2%	20.9
BAROMETER:	757.76 mmHg
Analyzed by:	novaservice
Released by:	auto

Errors

Comments

Test	Results	Units	Test Ranges Low	High	flags
BLOOD GAS					
pH	7.448		6.500	8.000	
pCO2	30.0	mmHg	3.0	200.0	
pO2	47.8	mmHg	0.0	800.0	
SO2%	83.4		30.0	100.0	
Hct	39	%	12	70	
Hb	12.8	g/dL	4.0	24.0	
pHTC	7.448		6.500	8.000	
pCO2TC	30.0	mmHg	3.0	200.0	
pO2TC	47.8	mmHg	0.0	800.0	
CALCULATED					
A	112.9	mmHg			
HCO3-	21.0	mmol/L			
BEecf	-3.3	mmol/L			
BEb	-1.5	mmol/L			
O2Ct	15.0	mL/dL			
O2Cap	17.8	mL/dL			
P50	26.5	mmHg			
SBC	22.8	mmol/L			
CHEMISTRY					
Na+	149.6	mmol/L	80.0	200.0	
K+	3.53	mmol/L	1.00	20.00	
Cl-	114.1	mmol/L	50.0	200.0	
Ca++	1.22	mmol/L	0.10	2.70	
Mg++	0.61	mmol/L	0.10	1.50	
Glu	61	mg/dL	15	500	
Lac		mmol/L	0.3	20.0	OC
BUN	17	mg/dL	3	100	
Creat	0.8	mg/dL	0.2	20.0	
CALCULATED CHEMISTRY					
TCO2	21.9	mmol/L			
Gap	14.5	mmol/L			
Ca/Mg	2.0	mol/mol			
nCa	1.25	mmol/L			
nMg	0.62	mmol/L			
Osm	296.9	mOsm/kg			
BUN/Cre	21.0	mg/mg			

Reported by Time:

Notes

UCD 0257

3606

BZ59 / NRL02
I.D. / PROJECT CODE

[redacted]
INVESTIGATOR / REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

HEATOLOGY

☐ VIRAL PRECAUTION

mmu [redacted]
ANIMAL I.D.

07 / 17 / 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM / CAGE

F — SEX
7 YR 3 MO — AGE
7 KG — WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-SX

HOSPITALIZED ☐ NO ☒ YES [redacted]

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	① 1.5	X 10 ^3/ µl
RBC	4.66	X 10 ^6/ µl
HEMOGLOBIN	12.5	gm/dl
HEMATOCRIT	37.8	%
MCV	81	fl
MCH	27.0	pg
MCHC	33.2	pg/fl
PLATELETS	2.40	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 8.3 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 500 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 1.5 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	71	1065
LYMPHOCYTES	29	435
MONOCYTES		
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐
① verified by repeat ECC [redacted] 7/17/18

7/17/18 [redacted]

7/17/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 7/17/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PE11 (3/14)

1516

☐ VIRAL PRECAUTION

B759, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

7/17/18
DATE OF SAMPLE

F 7 YR 3 MO 7 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
pre-st

HOSPITALIZED NO☐ YES☒ [redacted]
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☒ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	150	mM/L	15		CPK (S,HP)	896	U/L	25		pH		
2		POTASSIUM (S,HP)	3.6	mM/L	16		ALK PHOS (S,HP)	120	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	113	mM/L	17		GGT (S,HP)	65	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	609	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	17		19		CHOLESTEROL (S,HP)	178	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.1	mg/dl	20		TRIGLYCERIDE (S,HP)	34	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	21	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	54	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.2	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.6	g/dl										
13		ALT (S,HP)	60	U/L										
14		AST (S,HP)	53	U/L										

REPORTED BY [redacted] DATE: 7/11/18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 07/17/2018
PROCEDURE: Cranial Implant		ROOM: [redacted]	AGE: 7yr 3m
INVESTIGATOR: [redacted]		CAGE: [redacted]	SEX: F
REQUESTOR: [redacted]		W/0: 2127	WT: 6.45 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, animal's head placed into stereotax. Head sterilely prepped. 2mL Local anesthetic injected. Paramedian incision made approximately 5cm in length 1cm left of midline. Fascia incised and 2mm of left temporalis muscle elevated from temporal ridge. Just anterolateral to bregma on the left, a 14mm burr hole was made using a cranial perforator. Exposed dura was resected. Electrode implants were placed using investigational robotics. Cranial sealant was used to seal burr hole. A circular, thin titanium plate was attached to the skull to cover the burr hole. The incision was closed in an inverted, interrupted fashion using 3-0 vicryl in the fascia. The skin was closed using a running subcuticular stich using 3-0 PDS. Animal removed from stereotax and monitored.

Estimated blood loss: minimal (<2cc).

	POST OPERATIVE CARE:
TIME IN: 911 TIME OUT: 1137	Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days Dexamethasone SID x2 days Cefazolin BID x7 days Omeprazole SID x7 days Famotidine SID x3 days

SURGEON: [redacted] ASSISTANT: ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 1 of*

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 7/17/18 **Age:** 7 y 3 m **Sex:** M (F) **Wt. (Kg)** 7.0

Procedure: Cranial implant **ET Tube Size:** 3.0 **Investigator:** [redacted] **W/O#:** 2127 **Project/ID:** NRL02

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – O, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Atropine	0.7	IM	8:30	Cefazolin	0.7 mL	IV	911-11:15
Ketamine	0.7	IV	8:35	Depakote (Diluted)	0.45 mL	slow IV	948-10:03
				Dopamine (Diluted)	0.4 mL	IV	10:05 added to Fluids

Del: 8:30 Sx Table: 8:40 Prep: 848 Start: 855 Cut: 911 Proc: 943 - 11:25 Close: 11:26 - 1137 Full Recovery: 12:30

Time	8:50	900	915	930	944	1000	1015	1030	1045	1100	1115	1130			1151	1219	1224
Temp	92.0	92.0	92.0	92.1	91.0	93.3	95.1	95.5	96.1	97.0	97.4	97.6			92.1	99.2	99.4
150																	
140																	
130	▼											▼					▼
120							▼		▼	▼							
110	•		▼	▼	▼			▼			▼						
100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			▼	✓	✓
90		•	•	•	•	•											—
80	—																
70							—	—	—	—	—	—			—		
60			—	—	—											—	
55	▲	—													▲		
50																	▲
45																×	×
40	×	×	▲ ×	▲													
35		▲		×	▲×	×	×▲	×▲	×▲	×	×▲	×▲			×		
30										▲						•	⊙
25																	
20																	
15			∅	∅	∅	∅	∅	∅	∅	∅	∅	∅					
10	∅	∅													∅	∅	
Sigh																	
Fluids: LRS / Total/Rate	4 / 65	25 / 65	42 / 65	57 / 65	72 / 65	102 / 130	138 / 65	151 / 65	165 / 65	184 / 65	197 / 65	214 / 65			234 / 16	242 / 16	244 / 16
CRI: Propofol / Total/Rate	1.6 / 6.4	2.5 / 6.4	4.2 / 6.4	5.7 / 6.4	7.3 / 6.4	9.3 / 6.4	11.2 / 6.4	12.5 / 6.4	14.1 / 6.4	15.9 / 6.4	17.1 / 6.4	19.1 / 6.4			21.3 / 2.6	22 / 2.6	22.4 / 2.6
Iso Fl (%) / O²(L)	2.7 / 1L	1.5 / 1	1.3 / 1	1.3 / 1	1.3 / 1	1.1 / 1	1.1 / 1	1.1 / 1	1.1 / 1	1.1 / 1	1.1 / 1	1.2 / 1			.8 / 1	.7 / 1	.6 / 1

Dexmedetomidine 0.7mL IM 11:48am

Begin Recovery

Complete

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) ***Initials*** [redacted] rev.7/15-PC15A

UCD 0261

23-01594_000298

162

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

B259, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

MMU [redacted]
ANIMAL I.D.

1 / 11 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F 6 YR 9 MO 6.78 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	6.4	X 10 ^3/ µl
RBC	4.55	X 10 ^6/ µl
HEMOGLOBIN	11.8	gm/dl
HEMATOCRIT	36.3	%
MCV	80	fl
MCH	26.0	pg
MCHC	32.5	pg/fl
PLATELETS	2.90	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 6.7 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 6.4 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	42	2688
LYMPHOCYTES	56	3584
MONOCYTES	1	64
EOSINOPHILS	1	64
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

1/11/18 [redacted]

1/11/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 1-11-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

58

☐ VIRAL PRECAUTION

B259, NR402
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MNU-[redacted]
ANIMAL I.D.

1 / 11 / 18
DATE OF SAMPLE

F 6 YR 9 MO 6.78 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X
HEMOLYZED ☐
ICTERIC ☐
LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	147	mM/L	15		CPK (S,HP)	420	U/L	25		pH		
2		POTASSIUM (S,HP)	3.5	mM/L	16		ALK PHOS (S,HP)	107	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	111	mM/L	17		GGT (S,HP)	61	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	205	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	162	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.7	mg/dl	20		TRIGLYCERIDE (S,HP)	85	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	22	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.7	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	41	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.5	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.1	g/dl										
13		ALT (S,HP)	52	U/L										
14		AST (S,HP)	31	U/L										

REPORTED BY [redacted] DATE: 1-11-18

PERFORMED BY: CNPRC ☑ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU[redacted] Location [redacted] Date of exam: 1/11/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL02 Neuro Study

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 6.87 Temp: 102.4 HR: 180 RR: 42 BCS: 2.0 Gender: M/F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 1/11/18 Dates Reviewed: all Reviewers initials [redacted]

Comments: unremarkable

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 1/11/18 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: NSF

Imaging studies: (to be completed by Veterinary staff)

Date: 1/11/18 Radiographs: U/S exam: echo

Comments: no evidence of LVH Reviewers initials [redacted]

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

___ Approved for project

X Approved for project pending lab review

___ Approved for shipment

___ Stable weanling

___ Other

Comments: Bloodwork L+1

Examining Veterinarian [redacted] Date: 1/11/18

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

1073

☐ VIRAL PRECAUTION

BZ59 / NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

/ [redacted]
INVESTIGATOR REQUESTOR

MISCELLANEOUS

NX

3 / 4 / 19
DATE OF SAMPLE

ANIMAL DATA: _____-_____
ROOM CAGE

F _____YR ____MO _____KG
SEX AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS:
Infection of implant

HOSPITALIZED NO☐ YES ☐ _____-_____
ROOM CAGE

PRIOR THERAPY ☐ NO ☒ YES
LIST ALL AGENTS:
Antibiotics

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____hrs ☐ Anesthetized ☐ Other_____

PROCEDURE(S) REQUESTED: cytology

SPECIMEN: (1) Right front brain (2) left insertion cover (3) Right brain under insertion cover (4) right over pill box

RESULTS

All Slides have numerous neutrophils, Few Foamy macrophages, and moderate numbers of intra- and extracellular bacterial cocci.

Slides are consistent with a bacterial infection of SG tissues and surface of right side of brain. Culture results are pending but staph is of concern

[redacted]

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Biopsy Report

Animal ID	MMU [redacted]	**Report ID**	66750	**Report Complete**	26-FEB-19
Sex	F	**Death Type**		**Location**	[redacted]
Age	6 yrs 9 mon	**Weight (KG)**		**Work Performed**	26-FEB-19
Investigator	[redacted]	**Project**	NRL02	**Time Performed**	12:00 AM
Pathologist	[redacted]	**Clinician**		**Charge ID**	BZ59
Resident		**Hydration**		**Pathology Condition**	

Biopsy Observation BODY AS A WHOLE

A sample of discharge from a head implant was submitted. The discharge contained cellular debris mixed with moderate numbers of neutrophils, a few red blood cells and rare macrophages. A Grams stain did not demonstrate any bacteria

Biopsy Diagnosis

1 HEAD IMPLANT DISCHARGE

Biopsy Comments

While no bacteria were deffinitively identified in the sample submitted from the head implant, there were moderate numbers of neutrophils present. If the discharge does not resolve culture would be recommended.

351-359

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

NX

B259 / NRL02
I.D. / PROJECT CODE

MMU [redacted]
ANIMAL I.D.

/ [redacted]
INVESTIGATOR / REQUESTOR

3 / 4 / 19
DATE OF SAMPLE

ANIMAL DATA: ____ - ____
ROOM / CAGE

F
SEX

____ YR ____ MO
AGE

____ KG
WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:
(1) left under insertion cap (IC)
(2) Left SG

SOURCE OF SPECIMEN(S)
(3) left under IC scar tissue
(4) right Frontal brain SG
(5) right brain under IC
(6) R anterior port
(7) R bone under pill box
(8) R SG under pill cover
(9) R Brain under IC

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
X AEROBIC		
X ANAEROBIC 1-8	✓✓✓✓✓✓✓✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 3/5 (9): 1+ STAPH coagulase positive, 1+ Klebsiella pneumoniae
2. 3/6 (8): 1+ STAPH Coagulase positive, Few colonies Klebsiella pneumoniae
3. 3/6 (7): Few colonies Klebsiella pneumoniae
4. 3/6 (6): 1+ STAPH coagulase positive, Few STAPH Coagulase Negative
5. 3/6 (5): 1 colony Klebsiella pneumoniae, 2 colonies STAPH coagulase Negative
6. 3/6 (4): 1+ STAPH coagulase positive, 1+ STAPH Coagulase Neg, Few Klebsiella pneumo.
7. 3/6 (3): Few colonies STAPH coagulase positive, 1+ Corynebacterium ulcerans
8. 3/6 (2): 1+ STAPH coagulase Positive, 1+ Corynebacterium ulcerans

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 3/7/19

CLINICAL MICROBIOLOGY

351

☐ VIRAL PRECAUTION

B259, NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

NX

mmu [redacted]
ANIMAL I.D.

/ [redacted]
INVESTIGATOR REQUESTOR

3 / 4 / 19
DATE OF SAMPLE

ANIMAL DATA: ____ - ____
ROOM CAGE

F
SEX

____ YR ____ MO
AGE

____ KG
WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S): ① left under (IC) Insertion Cap

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 3/6 ①: 2 colonies Corynebacterium ulcerans
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 3/7/19

CLINICAL MICROBIOLOGY

327-328

DEAD

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

BZ59 / NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

[redacted]
ANIMAL I.D.

2 / 28 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F SEX | 6 YR 9 MO AGE | 7.5 KG WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: ☐ DIARRHEA
Abscess - implant

HOSPITALIZED NO X YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) ① deep purulence ② superficial

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
X AEROBIC	✓	✓
X ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 3/5 ① 2+ STAph Coagulase positive
2. 3/5 ② 1+ STAph Coagulase positive
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S	S		S		S
2			S	S	S		S		S

REPORTED BY: [redacted]

REPORT DATE: 3/5/19

CLINICAL MICROBIOLOGY

2/2014

1020

DEAD

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

BZ59, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

2, 28, 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 6 YR 9 MO 7.5 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS:	PRIOR THERAPY ☐ NO ☐ YES LIST ALL AGENTS:
HOSPITALIZED NO ☒ YES ☒ (1) _____ - _____ ROOM CAGE	

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____hrs ☐ Anesthetized ☐ Other_____

PROCEDURE(S) REQUESTED: cyto + gram stain - 4 slides submitted.

SPECIMEN: Head implant - swabbed purulence on slides.

RESULTS

Cytology - Large numbers of degenerate and non-degenerate neutrophils were mixed with cellular debris.
Gram stain: A few neutrophils contained small gram positive coccoid bacteria. Short chains of similar bacteria were also found in the extracellular fluid.

(1) [redacted] 2/28/19

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

884

3259, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

DEAD

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

2, 22, 19
DATE OF SAMPLE

F 6 YR 8 MO 7.23 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS:
Discharge at (L) head implant

HOSPITALIZED NO☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____hrs ☐ Anesthetized ☐ Other_____

PROCEDURE(S) REQUESTED: cytology

SPECIMEN: Discharge from head implant

RESULTS

The sample contained cellular debris mixed with moderate numbers of neutrophils, a few red blood cells and rare macrophages. A Grams stain did not identify any ~~[illegible]~~ significant bacteria

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

529

☐ VIRAL PRECAUTION

B259 / DRL 02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MHU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

MISCELLANEOUS

2 / 1 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 6 YR 8 MO 6.7 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS:

Discharge around head implant

HOSPITALIZED NO☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____hrs ☐ Anesthetized ☐ Other_____

PROCEDURE(S) REQUESTED: Cytology

SPECIMEN: Discharge from head implant.

RESULTS

Moderate numbers of neutrophils with few intra- and extra-cellular cocci

neutrophilic inflammation due to bacterial infection, likely staph

[redacted]

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

☐ VIRAL PRECAUTION 188

B259 / DRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

MMU [redacted]
ANIMAL I.D.

2 / 1 / 19
DATE OF SAMPLE

F SEX | 6 YR 8 MO AGE | 6.7 KG WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Discharge around head implant
HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) discharge

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA	✓	
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED*

1. 2/6 4+ Enterobacter cloacae
2. 2/6 4+ E. coli
3. 2/7 4+ STAPH coagulase Negative
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1	S	R		S	S	S		S	

REPORTED BY: [redacted]

REPORT DATE: 2/7/19

CLINICAL MICROBIOLOGY

2/2014

116

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

OP

B259 / NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

mmu [redacted]
ANIMAL I.D.

1 / 24 / 19
DATE OF SAMPLE

F 6 YR 7 MO 6.7 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☒ DIARRHEA

HOSPITALIZED NO ☒ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS: ON PBS

SOURCE OF SPECIMEN(S) Rectal

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☑ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA	✓	
☑ CAMPYLOBACTER	✓	
☑ YERSINIA (CLINICAL)		✓
☐ AEROBIC		
☐ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1.
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 1/28/19

CLINICAL MICROBIOLOGY

2/2014

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 11/20/18
Wt (kg) 6.98 Age: 6 yr SM Sex: M/F Procedure: Sed. rec's w/ propofol ET Tube size: 5.0
Investigator: [redacted] W/O# 3513 Project: NRL62 IV Catheter Placement: R cephalic

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
	Ø				Ø		

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR-**0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP –

Time:	300	310	320	330	340
Temp:					
160					
150					
140					
135					
130					
125					
120	•				
115					
110					
105					
100	✓	✓ •	✓ •	✓ •	✓ •
95					
90					
85					
80					
75					
70					
65					
60					
55					
50					
45					
40	X	X	X	X	X
35					
30					
25	O				
20		O	O	O	O
15					
10					
SIGH	S	S	S	S	S
Fluids total/rate	M/R	0	2	3	
Propofol CRI	1.1/5	1.9/4	2.6/3	3/2	3.4/2
Iso FI (%)/ Oxygen (L)	0/2	0/2	0/2	0/2	0/2

Complete

11/20/18 [redacted] 11/20/18 11/20/18

3 ↓ propofol to "3 ml/hr" 310pm
↓ Propofol to "2 ml/hr" 320pm
330pm

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

PC 15 Initials: [redacted]

Post-operative monitoring record

Date: 10/22/18 Animal# [redacted] Procedure: Bilateral cranial implants

			Date	Date	Date	Date	Date	Date	Date
General Obervations			10/23	10/24	10/25	10/26	10/27/18	10/28/18	10/29/18
	Appetite		G	F	G	F	P/F	G	P
	Hydration		G	G	G	G	G	G	G
	Stool		N	N	N	N	N	N	N
	Incision		CDI	CDI	CDI	CDI	CDI	CDI	CDI
		Score							[redacted]
Physiologic parameters									
Pupils									
	Normal	0	0	0	0	0			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	0	0	0	0			
	Tachypnea	2							
Mucous membranes									
	Pink	0	0	0	0	0			
	Pale	2							
Posture									
	Sitting/standing upright	0	0	0	0	0			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0	0	0	0	0			
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	0	0	0	0			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score			0	0	0	0			
Initials:			[redacted]						

revised 7/2017

5101

BZ59, NRLQ2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM [redacted] GE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

10 / 22 / 18
DATE OF SAMPLE

F SEX | 6 YR 4 MO AGE | 7.11 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-Sy

HOSPITALIZED ☐NO ☐YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	4.1	X 10 ^3/ µl
RBC	5.07	X 10 ^6/ µl
HEMOGLOBIN	11.5	gm/dl
HEMATOCRIT	35.7	%
MCV	70	fl
MCH	22.6	pg
MCHC	32.1	pg/fl
PLATELETS	3.73	X 10 ^5/ µl
☐ RETICULOCYTES	%	X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	8.3	gm/dl
☐ FIBRINOGEN	200	mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 4.1 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	64	2624
LYMPHOCYTES	33	1353
MONOCYTES	3	123
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

[redacted] 10-22-18

[redacted] 10-22-18

REPORTED BY: [redacted]

REPORT DATE: 10-22-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

2211

☐ VIRAL PRECAUTION

B259, NRLD2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

NMM[redacted]
ANIMAL I.D.

10, 22, 18
DATE OF SAMPLE

F 6 YR 4 MO 7.11 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre. Sx

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	146	mM/L	15		CPK (S,HP)	782	U/L	25		pH		
2		POTASSIUM (S,HP)	3.9	mM/L	16		ALK PHOS (S,HP)	100	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	32	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	25	mM/L	18		LDH (S,HP)	533	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	17		19		CHOLESTEROL (S,HP)	166	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	5.5	mg/dl	20		TRIGLYCERIDE (S,HP)	66	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	18	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.5	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	73	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.1	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.4	g/dl										
13		ALT (S,HP)	28	U/L										
14		AST (S,HP)	36	U/L										

REPORTED BY [redacted] DATE 10/22/18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

CALIFORNIA PRIMATE RESEARCH CENTER

INTERVENTION / SURGERY

PROJECT:	ANIMAL SP ID# MMU	DATE OF EVENT MO DAY YR
NRL02	[redacted]	10 22 18

PROCEDURE: Cranial Implant	ROOM: [redacted]	AGE: 6y 4m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: F
REQUESTOR: [redacted]	W/0: 3210	WT: 7.00 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS

Circle one: Experimental (XI) / Colony (SN)

T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, fentanyl and propofol, the animal's head was placed into the stereotaxic frame. The head was sterilely prepped. Midline incision made approximately 6cm in length. Fascia incised and temporalis muscle elevated bilaterally from temporal ridges. Fifteen millimeters anterolateral to bregma, burr holes were made bilaterally using a cranial perforator. Exposed dura was incised and reflected anteriorly. Electrode implants were placed using investigational robotics. Gelfoam and titanium plate were used to seal burr hole. This process was repeated on the right hemisphere. Two separate stab incisions were made 1.5cm off midline in the posterior portion of the exposure and transcutaneous ports were passed through the incision. The main midline incision was closed in an inverted, interrupted fashion using 3-0 vicryl in the fascia. The skin was closed using a running subcuticular stich using 4-0 monocryl. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss: minimal (<2cc).

TIME IN: 8:50am

TIME OUT: 2:24pm

POST OPERATIVE CARE:
Hydromorphone TID Q4h x3 days
Buprenex SID (pm dose only) x3 days
Dexamethasone SID x7 days
Cefazolin BID x7 days
Omeprazole SID x7 days
Famotidine SID x3 days
Levetiracetam BID x7d

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 1 of 2*

Animal: MML1 [redacted] **Home Room:** [redacted] **Date:** 10/22/18 **Age:** 6y4m **Sex:** M / F **Wt. (Kg)** 7.06

Procedure: Bilat. Cranial Implant **ET Tube Size:** 5.5 **Investigator:** [redacted] **W/O#:** 3210 **Project/ID:** NRL02/B759

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Levetiracetam	2.10 mL	PO	8:10	Hydromorphone	0.11 mL	IM	2:16
Dexamethasone	0.50 mL	IM	8:10	Cefazolin	0.50 mL	IV	8:45, 10:45, 12:45
Atropine	0.70 mL	IM	8:10, 12:45	Maropitant	0.70 mL	SQ	2:40

Del: 8:10 Sx Table: 8:30 Prep: 8:43 Start: 8:50 Cut: 9:15 Proc: 10:00 - 2:00 Close: 2:00 - 2:24 Full Recovery: 3:37

Time	8:10	8:50	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	1:00	1:15	1:30	1:45	2:00	2:15	2:27	2:45	3:00	3:15
Temp	96.6	95.6	95.7	96.2	97.3	98.2	98.4	98.2	97.9	97.5	97.2	97.6	98.2	98.5	98.3	98.1	98.0	97.9	97.8	97.7	97.7	97.7	97.8	97.9	98.1	98.0	98.0	98.3
150																												
140																												
130	•																											
120																												
110		•	•																									
100	▼			•	•	•	•	•	•	✓▼	▼	✓	▼	▼			▼	•	•	•	•	•	▼	▼	▼	✓	▼	▼
90	✓	▼	▼	▼	▼	▼	▼	▼	▼	✓	✓	▼	▼	✓	▼	✓	▼	✓	▼	✓	✓	▼	✓	✓	✓	▼	•	
80																												
70																												
60																											—	
55	—	—	—				—	—	—	—	—	—	—				—	—	—	—	—	—	—	—				—
50				—	—	—								—	—	—									—	—		
45																												
40	X																							X	X			
35		X	X ▲	X	X	X	X	X▲	X▲	X▲	X	X▲	X	X	X	X	X	X	X▲	X	▲	▲	X			X	X	X
30	▲	▲		▲	▲		▲				▲		▲	▲		▲	▲	▲				X	▲	▲			▲X	▲
25						▲																			▲	▲		
20																												
15	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
10																												
Sigh																												
Fluids: LRS Total/Rate	18 / 70	29 / 70	35 / 70	50 / 70	67 / 70	85 / 70	100 / 70	120 / 70	135 / 70	154 / 70	170 / 70	185 / 70	205 / 70	230 / 70	247 / 70	265 / 70	285 / 70	297 / 70	313 / 70	329 / 70	345 / 70	362 / 70	380 / 70	399 / 70	415 / 70	427 / 35	434 / 70	445 / 70
CRI: Fentanyl Total/Rate	2.0 / 70	3.0 / 70	3.4 / 70	5.2 / 70	6.9 / 70	8.6 / 70	10.1 / 70	12.2 / 70	13.7 / 70	16.5 / 70	17.1 / 70	19.9 / 70	20.6 / 70	23.1 / 70	24.9 / 70	26.2 / 70	28.7 / 70	29.9 / 70	31.4 / 70	33.1 / 70	34.4 / 70	36.2 / 70	38.2 / 70	Stopped @ 2:47				
Iso FI (%) / O^2 (L)	1.7 / 1.5	1.7 / 1.5	1.7 / 1.5	1.6 / 1.5	1.6 / 1.5	1.6 / 1.5	1.4 / 1.5	1.4 / 1.5	1.4 / 1.5	1.3 / 1.5	1.3 / 1.5	1.3 / 1.5	1.3 / 1.5	1.3 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.2 / 1.5	1.1 / 1.5	0.8 / 1.5	0.7 / 1.5

Furosemide 0.3mL IM @ 241

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) *Initials* [redacted] rev.7/15-PC15A

UCD 0280

23-01594_000317

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 2 of 2*

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 10/22/18 **Age:** 4yr 4mo **Sex: M / F** **Wt. (Kg)** 7.06

Procedure: Blood Gas Implant **ET Tube Size:** 5.5 **Investigator:** [redacted] **W/O#:** 3210 **Project/ID:** NRL02/[redacted]

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – V, Dias – ^

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
See previous page							

Del: _____ Sx Table: _____ Prep: _____ Start: _____ Cut: _____ Proc: _____ - _____ Close: _____ - _____ Full Recovery: _____

Time	1331																													
Temp	98.4																													
150																														
140																														
130																														
120																														
110																														
100																														
90	▽																													
80	°																													
70																														
60	←																													
55																														
50	▲																													
45																														
40																														
35	X																													
30																														
25																														
20																														
15	Ø																													
10																														
Sigh																														
Fluids: Total/Rate	0.9% / 35																													
CRI: N/A Total/Rate																														
Iso Fl (%) / O^2.(L)	0.6 / 1.5																													

Completed

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) ***Initials*** [redacted] rev.7/15-PC15A

UCD 0281

23-01594_000318

4812

B259 NPL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

mmu [redacted]
ANIMAL ID.

10 / 2 / 18
DATE OF SAMPLE

F 6 YR 4 MO 7.32 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ✓ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre Project PE

HOSPITALIZED ☐ NO ☐ YES ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☑ Anethetized ☐ other ____

☑ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	7.9	X 10 ^3/ µl
RBC	4.55	X 10 ^6/ µl
HEMOGLOBIN	10.1	gm/dl
HEMATOCRIT	31.8	%
MCV	70	fl
MCH	22.2	pg
MCHC	31.8	pg/fl
PLATELETS	2.27	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.0 gm/dl

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 7.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	62	4898
LYMPHOCYTES	32	2528
MONOCYTES	1	79
EOSINOPHILS	5	395
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

10/2/18 [redacted]

10/2/18 [redacted]

REPORTED BY [redacted]

REPORT DATE: 10/2/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

2070

BZ59, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

☐ VIRAL PRECAUTION

mmu [redacted]
ANIMAL I.D.

10, 2, 18
DATE OF SAMPLE

F 6 YR 4 MO 7.32 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ✓ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: pre project PE

HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☐ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	177	U/L	25		pH		
2		POTASSIUM (S,HP)	3.5	mM/L	16		ALK PHOS (S,HP)	88	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	110	mM/L	17		GGT (S,HP)	28	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	25	mM/L	18		LDH (S,HP)	160	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	14		19		CHOLESTEROL (S,HP)	149	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.7	mg/dl	20		TRIGLYCERIDE (S,HP)	59	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.1	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	23	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	63	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.6	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.0	g/dl										
13		ALT (S,HP)	23	U/L										
14		AST (S,HP)	18	U/L										

REPORTED BY [redacted] DATE: 10-2-18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 10/3/18
Wt (kg): 6.98 Age: 6yr Sex: M/F Procedure: MRI Skull ET Tube size: 5mm
Investigator: [redacted] W/O# 3045 Project: UCD2 IV Catheter Placement: 0

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.8mls	IM	~11:55a				
ketoprofen	0.35mls	IM	~11:57a				

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP –

Time:	12:00	12:20
Temp:		
160	•	
150		•
140		
135		
130		
125		
120		
115		
110		
105		
100	✓	✓
95		
90		
85		
80		
75		
70		
65		
60		
55		
50		
45		
40		
35	X	X
30		
25	0	
20		0
15		
10		
SIGH		
Fluids total/rate	N/A	
CRI:	N/A	
Iso FI (%)/ Oxygen (L)	1.7% / 1.5L	

Complete

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

Physical Exam Certificate
California National Primate Research Center

Animal number: MHU[redacted] Location: [redacted] Date of exam: 10/2/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: _____

Negative TB Test Date: _____

Physical exam findings: (to be completed by Veterinary staff)

Weight: 9.93 (kg) Temp: 99.9 HR: 120 RR: 36 BCS: 2.0 Gender: M F Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	(NAO)	A	NE	
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	

Other: _____

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 10/2/18 Dates Reviewed: 10/2/18 Reviewers initials: [redacted]

Comments: diarrhea x 8 episodes, trauma x 2, dystocia x1

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 10/2/18 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: WNL

Imaging studies: (to be completed by Veterinary staff)

Date: 10/2/18 Radiographs: N/A U/S exam: echo 4/3/18

Comments: LVH neg Reviewers initials: [redacted]

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

✓ Approved for project Comments: _____

_____ Approved for project pending lab review

_____ Approved for shipment

_____ Stable weanling

_____ Other _____

Examining Veterinarian: [redacted] Date: 10/3/18

Original– Animal's record Bottom copy - Requestor _____ PC17, Rev. 1/14/14

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/3/19		G	G	N	SO: BAR OPM: cranial implant infection	Mild-
					Mod. swelling around (L) implant. No	
					D/C Noted. Very Mild erythema present	
					Animal is Moving around cage well	
					and has good appetite. No Neurologic	
					deficits observed. NEPD	
					A: Apparently stable animal w/ cranial	
					implant inf.	
					P: CIM on OCM Daily, cont tx as	
					planned. Nx scheduled 3/4.	[redacted]
3/4/19					MMU [redacted] 0.8 MLS KET/D->NECROPSY W.O. 4852 NRL02	[redacted]
	WT: 6.910	CAGE TIME_____	15MIN____	30MIN____	45MIN____ 1HR____ 1.25HR____ 1.5HR____ 1.75HR____ 2HR____	

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # SS

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
3-1-19		G	G	N	SO BAR, OP: implant infection: Animal Active with	
					NEPO. mild Erythema and scabbing at implant	
					notes. Animal stable	[redacted]
3/1/19					SO: Cytology (2/22) was inconclusive	
					because it was contaminated w/	
					blood	
					A/P Infected head implant	
					Unable to P/O strep @ this time	
					so elected to switch to clindamycin	
					B/ cont Ketoprofen & simbadol	
					S/C'd euthanasia for project endpo	
					ion 3/4 VMHS & head implant daily	
3/2/19					SO: BAR (P) OP: Infected cranial implant	
					Mod. erythema and swelling around	
					(L) cranial implant. Mild amt of	
					bloody d/c. (Animal appeared to be	
					picking). Moving around cage well,	
					eagerly accepting treats. Pupils same	
					size, No uncoordination, No ~~other~~ (L)	
					Neurological signs observed cage-side.	
					A: Stable animal w/ cranial implant inf.	
					P: CTM daily, assess comfort.	
					Supportive care until NX 3/4.	[redacted]
					(L) RE [redacted] 5/2/19	[redacted]

MMU [redacted] F
6yrs 9mos 7.50kg NRL02

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 188 mg Total Dose
0.60 mLs Volume — IM Rte — BID Freq — 2 Days
Start 02-28-2019 End 03-01-2019
Ended

6yrs 9mos 7.50kg NRL02

Clindamycin 150 mg/mL
12.50 mg/kg Dose — 94 mg Total Dose
0.60 mLs Volume — IM Rte — TID Freq — 3 Days
Start 03-01-2019 End 03-03-2019

MMU [redacted] F
6yrs 9mos 7.50kg NRL02

Simbadol (Buprenorp
0.72 mg/kg Dose — 5.4 mg Total Dose
3.00 mLs Volume — SC Rte — Q3D Freq — 5 Days
Start 02-28-2019 End 03-04-2019
Extended

MMU [redacted] F
6yrs 9mos 7.50kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 38 mg Total Dose
0.38 mLs Volume — IM Rte — SID Freq — 5 Days
Start 02-28-2019 End 03-04-2019
[redacted] Upd01MAR?15:42 Prn01MAR?15:42

MMU [redacted] F
6yrs 9mos 7.50kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose
1.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 03-01-2019 End 03-27-2019

[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
2/27/19					P: GTM Reeval @ cleaning cont to apply TAO or NZF puffer @ sedated cleanings	[redacted]
2/ /19 MMU [redacted] LOCATION [redacted] 1.9 MLS KET						[redacted]
WT: 7.65 CAGE TIME 2:20 15MIN 3 30MIN ___ 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						
2/28/19					S: Delivered sedated. AARI Lab observed purulence from L implant, elected to move implants cleaning up. On initial assessment there was a small new draining tract rostro medial to the (L) implant. Expressed purulence from implant margin & draining tract - collected samples for culture & cytology. Pockets of purulence extended in a 4x5 cm area, able to express >2 ml purulence. Flushed w/ large volume of PNS. Consulted w/ lab staff & started antibiotics & analgesics. Given 0.2 ml Dexmed / Ab IM & 0.2 ml Ketamine IV A: Implant infection P: Work to coordinate terminal project surgery within next week	[redacted]

MMU [redacted] F
6yrs 9mos 7.50kg NRL02

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 188 mg Total Dose
0.60 mLs Volume — IM Rte — BID Freq — 7 Days
Start 02-28-2019 — End 03-06-2019

Simbadol (Buprenorp
0.72 mg/kg Dose — 5.4 mg Total Dose
3.00 mLs Volume — SC Rte — Q3D Freq — 3 Days
Start 02-28-2019 — End 03-02-2019

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 38 mg Total Dose
0.38 mLs Volume — IM Rte — SID Freq — 3 Days
Start 02-28-2019 — End 03-02-2019

Admit ⊘ Prob. Sheet ⊘

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
2/15/19					SO: Rec'd in [redacted] per wo#4583, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. ~~Performed neuro recordings~~ then returned to homecage for recovery	
						[redacted]
2 / 15 /19 MMU [redacted] LOCATION [redacted] / 0.8 MLS KET						
WT: 7.23 CAGE TIME 1:40 15MIN 1 30MIN 2 45MIN 3 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___						
					___ KET IM , BLED ___ MLS	
					TB TEST L EYE 24HR___ 48HR___ 72HR___	
2/22/19					SO: Rec'd in [redacted] per wo#4666, NRL02. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. ~~Performed neuro recordings~~ then returned to homecage for recovery	
					SO2: During cleaning of (L) side implant, ~1/2mL of yellow hazy discharge expressed from medial side of implant. cleaned thoroughly w/ DNS after obtaining sample swab. A: Discharge from (L) implant P: Cw cart lab results, cont. weekly cleanings	[redacted]
2/22/19 MMU [redacted] 0.7 MLS KET/ D->SURGERY NRL02 W.O. 4666						
WT: 7.50 CAGE TIME 1:40 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR						
2/26/19					SO: Still awaiting cytology. Send e-mail to request results	[redacted]
2/27/19					SO: Verbal preliminary report of cytology (2/22) revealed ↑ PMNs but no signs of bacteria. No culture was submitted. A: Clinical implant w/ mild d/c - no obv. signs of infection	
					①②③ ist ob - [redacted] 2/15/19	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P = Poor, N = Normal, SS = Semi Solid, L = Liquid, B = Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
2/7/19					PMN inflam due to bact inf, likely staph A. mild cranial implant inf w/ v. mild d/c P. CTM when sedated clean w/ DNS & apply either TAO or use NZF puffer on cranial implant contact lab to update & develope plan for long term	[redacted]
2/8/19					SO: Rec'd in [redacted] per WO# 4521. Cleaned implants w/ DNS and applied TAO to margins. Implant margins clean & dry, no discharge or crustiness.	[redacted]
2/8/19					MMU [redacted] / 0.8 CC KET /D->SURGERY W/O 4521 NRI.02	
					WT: 7.30 CAGE TIME 1:25 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	[redacted]
					SO2: Micro results: 4+ Enterobacter cloacae	
					4+ E. Coli	
					4+ Staph coag (-)	
					A/P see 2/7 entry	[redacted]
2-13-19		G	G	N	SO: BAR, OP: Discharge head implants: Implants C+D. Animal active with no signs of pain or discomfort at observations.	[redacted]
2/14/19		G	G	N	SO: BAR OPM: D/C head implant. Implants C+D w/ very minor scabbing @ base. No erythema, swelling or D/C noted. A: stable implant. P: D/C to CTOP ☒, cont weekly cleanings w/ TAO application.	[redacted]
					☒ D/C ☒ Snomed ☒ Recharge	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials

PHYSICAL EXAM [redacted]

Date 2-1-19 Weight 7.18 BCS 2.0

HR 136 RR 36 TEMP 99.4

☐ Project Code

☒ Shave Tattoo

1. Integument head implant
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal abrasion (R) HD2
6. Thorax Auscultation WNL
7. Abdominal Palpation liquid intestines
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation WNL

Animal may be unpaired or individually housed while receiving veterinary care.

(R) button lesion sero-sanguinolent discharge, collect culture + cytology

(L) button erythema w/some granulation tissue but no discharge. Shaved + clean w/DWS

A: Suspect mild staph infection / contamination

P: ✓result cytology

✓result cultures

If staph infection confirmed assess for topical antibiotherapy [redacted]

2/1/19 MMU [redacted] 0.7 CC KET/D->1310 W/O4462 NRL02

WT: 7.18 CAGE TIME 220 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___ [redacted]

Admit ⊗ Prob. Sheet ⊗

2/6/19		G	G	N	SO: BAR ORM Cranial implant, Margins CDI, very mild scabbing around (L) post. No swelling or d/c noted Followed up w/ clin path for cytology + culture results → Results not ready yet. A: stable cranial implant. P: CTM on ORM 1x/w, await labs cont. weekly cleanings
2.6.19	7.45				TAGP ✓
2/7/19					SO: [redacted] ① cytology (2/1) mod # of PMNs w/ few intra + extra-cellular cocci

① RE [redacted] 2/7/19 [redacted]

Obs Form 12-16-2011

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Animal ID# [redacted]

California National Primate Research Center

Page # 50

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/25/19					SO: OPM: cranial implant. Animal was	
					sedated for cleaning today. Currently	
					on PBS. Stool quality variable	
					on PBS. R/C collected 1/24.	
					A: Apparently stable animal w/ cranial	Implant
					and intermittent LS.	
					P: CTM on OPM 1x/W, await R/C results	
					If LS persists consider Tylosin	
					E-Mail to SRA regarding NX date	[redacted]
1-25-19					SO: BAR, AAR: (R) pointer finger trauma: Animal	
					has a minor laceration ≈ 2mm long to (R)	
					HD2 - Self resolved. Using digit + hand w/wl.	
					A: minor RHD2 lac. P: Ctm on m.H. No tx.	[redacted]
1-29-19		G	G	N	SO: BAR, OP: Implants cranial: Implants are	
					C+D, no scale noted. Animal active with	
					NEPD.	[redacted]
1/31/19		G	G	N	SO: BAR. OPM: implant. Ø discharge	
					noted at time of observation.	[redacted]
					A: stable animal w/ implant	
					P: Await NX date per SRN, D/C from	
					OPM, Admit to LTOP, cont weekly	
					cleanings	
					D/C Snomed Recharge	
						[redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] **California National Primate Research Center** Page # 49

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/18/19 MMU [redacted] 0.7 MLS KET, D→ 6012 W/O 4285 NRL02						
WT: 6.73 CAGE TIME 1:35 15MIN 2 30MIN 3 45MIN 1HR 1.25HR 1.5HR 1.75HR 2HR						[redacted]
1/19/19		G	G	SS	SO: BAR RE: liqstl A: 2nd report in the last week, on PBS P: CONT PBS, await NX per project	[redacted]
1/17/19 ①		G	G	cc	SO: BAR OPE: cranial implants - cranial implants clean/dry. due for cleaning this week	
1/18/19 ②		FA	G	L	SO: BAR RE: liquid stool - continued A: 1st recent report. P: CTM stool quality w/ Met	[redacted]
1/20/19		F	G	L	SO: BAR RE: liqstl A: on PBS, intermittent diarrhea P: AMC, see 1/14/19 entry	[redacted]
1-21-19		G	G	L	SO: BAR. RE: liquid stool : A: confirmed report. P: ctm on op and MH. on PBS Tx.	[redacted]
1-22-19		G	G	L	SO: BAR. RE: liquid stool : A: confirmed report. P: ctm on op and M.H. - on tx	[redacted]
1-24-19		G	G	L	SO: BAR, OP: cranial implants : implants are C+D today. Animal is active with NEPD. ON PBS for liquid stool, R/C collected	[redacted]

Samples Collected
- Date: 1-24-19
- (R/C) SS CBC Chem20
- Vol. blood N/A
- Other: N/A.

1/25/19					SO: Rec'd in [redacted] prep per WO#4322. Cleaned implants w/ DNS. Implants C+D, no discharge.	[redacted]
1/25/19 MMU [redacted] LOCATION [redacted] / 25 MLS KET 0.7 cc						
WT: 6.96 CAGE TIME 1:38 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						[redacted]

① LE 1/19/19 KD [redacted] LE 1/19/19 KD

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Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/5/19		G	G	SS, L	SO: BAR Re: liq stool, OPM implant cleaning; Noted mostly semi solid stool in cage w/ small amount liquid stool, noted tried tail staining. NEPD, implant CDI, animal readily ate treats.	
					A: small amount liq. stool + tail staining	
					P: restart RX, ctm 1x/wk on OPM & as reported.	[redacted]
1/10/19		G	G	N	SO: BAR OPM: cranial implants clean/dry. Moving well in cage.	
					A: variable stool, post cranial implant	
					P: vis ✓ 1x/week, t/- clean implant 1x/week	[redacted]
1/11/19					SO: OPM: Cranial implant OK to d/c head well cleanings due to Nx scheduled next week	[redacted]
1/14/19					SO: Project endpoint is 1/16, animal will not have sedated headwell cleaning prior to Nx as it is S/C'ed this week	[redacted]
					Animal is not going to Nx on 1-16, will be postponed, will be rescheduled as per SRA	[redacted]
1/18/19						

MMU [redacted] F
6yrs 7mos 6.96kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose

1.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 01-05-2019 End 01-31-2019

Cranial Implant CLEANING
0.7 mls Ketamine Ø mls Dexmedetomidine/Atipamizole
reversal or chaired cleaning
Implant/post edges cleaned and hair trimmed
Novisan/Betadine was used to clean the implant.
Discharge: Y (N)
Amount of discharge: Ø
Color: normal
Additional Treatment: N/A

6.73

BCS: 2.0

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/26/18		G	G	N	SO: BAR, OPM: Implant Cleaning. Cranial	
					implant CDI, margin WNL, no d/c. Cleaned	
					w/DNS cageside per DVM plan. NEPD.	
					A: Stable cranial implant	
					P: CTM on OPM 1x/week per DVM	
					Clean implant 1x/week w/DNS	
					unless changes.	[redacted]
12/27/18		F	G	N	SO: BAR, OPM: Implant cleaning. Cranial	
[redacted]					implant: CDI. Margins C+D, WNL	
⊗ Recharge					no scabbing. NEPD.	[redacted]
1/2/19		G	G	L/SS	SO: BAR, OPM: Implant cleaning. Head	
					implant: CDI, margins C+D, WNL, no	
					crusting. Cleaned implant w/DNS	
					cageside. Very good for cleaning.	
					A: Stable cranial implant	
					P: CTM on OPM 1x/week, clean	
					implant weekly per DVM	[redacted]
1/4/19		F	G	L	SO: BAR, OPM: Implant Cleaning	
					Re: Liquid stool. Cranial implant	
					CDI, margins WNL, no crusting.	
					A: Confirmed large amount of Diarrhea	
					in cage, stable cranial implant	
					P: Vis ↓ 1x/wk on OPM	
					Clean implant 1x/wk per DVM	
					P2: If LS continues consider PBS	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/15/18		G	G	SS	SO: BAR Re: light; no light seen, only semi-solid A:	
					1st recent report, unconfirmed P: cm on routine MH	[redacted]
12/20/18	MMU [redacted] / 0.8 CC KET / D→ SURGERY				W/O 3939 NRL02	
	WT: 6.96 CAGE TIME 11:00 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___					[redacted]
12/20/18					SO: Animal is no longer receiving	
					weekly recordings; but, she still	
					needs weekly cleaning - preferably	
					through the cage bars (if possible) C	
					the implant/ports have slight	
					erythema around them though	
					they look good overall.	
					A: Stable cranial implant	
					P: CTM & clean weekly (through	
					cage) on OP (d/c from LTOP ~~Q~~)	[redacted]
12/21/18		G	G	N	SO: BAR OPM: Implant Cleaning.	
					Implant: CDI w/ serosanguous scab	
					at margins.	[redacted]
12/22/18		G	G	N	SO: BAR OPM: Implan cleaning. Active + moving	
					well. Implant appears CDI.	[redacted]
12/23/18		G	G	N	SO: BAR OPM: Implant cleaning; Implant CDI w/ no	
					scabbing noted. NEPD, animal active for treats.	[redacted]
12/24/18		G	G	N	SO: BAR OPM: Implant cleaning, inc. + implant ~~w/ no~~ ① CDI	
					w/ no scabbing seen. NEPD.	[redacted]
12/25/18		G	G	N	SO: BAR OPM: Implant cleaning; inc. + implant CDI w/ no	
					scabbing noted. NEPD.	[redacted]
12/26/18		G	G	CC	SO: BAR OPM: Implant cleaning. Cranial	
					implant CDI, no dis, margins intact. NEPD	[redacted]

① [redacted] 12/24/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

MMU

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
11/29/18					Rec'd in [redacted] w/o# 3595 NRL02	
					Cleaned implant margins w/	
					Chlorhex scrub. Margins are	
					C+D, improved erythema	
					of left side. gave additional	
					0.7mL Ket im, completed	
					recordings, returned to	
					home cage for recovery	
					monitored until fully alert	[redacted]
12/7/18	7.04				0.7 Ket im; D→ surgery per w/o 3809 NRL02	[redacted]
12/7/18					SO: rec'd in [redacted] w/o # 3809 NRL02	
					implant margins C+D.	
					Cleaned margins w/ Chlorhex	
					gave additional 0.6mL Ket im.	
					Completed recordings, returned	
					to home cage for recovery	[redacted]
12/7/18					Animal returned to homecage and monitored	
					until recovered	[redacted]
12/7/18					SO: noted (R) side implant	
					(sq cover) warm to touch post	
					recordings. Notified vet	
					will monitor closely at next	
					recording.	[redacted]

12/13/18 MMU [redacted] / 0.7 CC KET ~> SURGERY W/O 3795 NRL02

WT: 6.90

CAGE TIME_____15MIN____30MIN____45MIN____1HR____1.25HR____1.5HR____1.75HR____2HR____

12/13/18					SO: Rec'd in [redacted] per wo# 3795 NRL02 Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery	* skin near/on implants felt warm at end of recordings. [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 4CC

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/3/18 ①					LT peanuts started due to thin BCS ①	[redacted]
11/13/18					LT peanuts ending, due to Good BCS (2.5) on 11/8. A Stable animal	
					P CTM on MH and project sedations and CTOP. If wt ↓'s consider	
					More Chow or adding supps	[redacted]

MMU [redacted] F
6yrs 5mos 6.90kg NRL02

Long Term Peanuts
1.00 serving/animal Dose — 1. serving Total Dose

1.00 serving Volume — PO Rte — SID Freq — 43 Days
start 10-02-2018 End 11-13-2018

11/15/18 MMU [redacted] 0.7 CC KET IM, DELIVERED TO SURGERY W/O 3484 NRL02 — MONITORED UNTIL RECOVERED
WT: 6.94

11/15/18					SU: Rec'd for neuro recordings	[redacted]
					WO# 3484 NRL02 cleaned implant	
					w/ chlorhex scrub & shaved around	
					implant. Edges of implant CDEI	[redacted]
					SO2: gave add. 0.1cc KET IM during procedure	[redacted]

Recharge

11/20/18 MMU [redacted] 0.8 CC KET IM, D→ SURGERY W/O 3513 NRL02
WT: 6.98
CAGE TIME: 3.55 15MIN 3 30MIN__ 45MIN__ 1HR__ 1.25HR__ 1.5HR__ 1.75HR__ 2HR__

11/20/18					SU: rec'd for neuro recording.	[redacted]
					prepped, placed IV cath, maintained	
					w/ propofol + O2, see anesthesia	
					sheet. Cleaned implant w/	
					Chlorhex scrub mild erythema	
					on ① implant ② edge. Recovered +	
					returned to home cage	[redacted]

11/29/18 MMU [redacted] 0.7 CC KET IM, ~> SURGERY / W/O 3595 NRL02 — MONITORED UNTIL RECOVERED
WT: 7.50

[redacted]

① KL [redacted] 11/15/18 ② WD [redacted] 11/20/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000335

UCD 0298

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/6/18	cont.				was abraded @ finger tip. No active bleeding	
					or swelling associated. Using digit w/ I. A: RHDy	
					trauma healing by 2° int. P: Follow-up @ 11/7	
①					sedation per project.	[redacted]
11/4/18		F/G	G	N	SO: OPM. cranial implant; implants CDI, scabbed. Cranial	
					head incision CTD, scabbed, adhered + well opposed. Trimmed	
					tail of SS cage side per Vet, NEPD. Readily ate treats.	[redacted]
② 11/3/18		G	G	N	SO: OPM: Cranial implant. Implant appears	
					CDI, margins appear CTD.	[redacted]
11-7-18		G	G	CC	SO: BAR OP: Cranial implant: implants are CTD.	
					No fresh trauma noted. Animal Active with	
					NEPD	[redacted]
11-8-18		G	G	N	SO: BAR OP: Cranial implant: Implants are	
					CTD. Skin adheres well, small amount of	
					Scabbing. Animal Active with NEPD.	
					A: Animal stable with implants.	
					P: Ctm ON OPM 2x/wk. and m.H.	[redacted]

11/8/18 MMU [redacted] 0.7MLS KET IM ~> SURGERY W/O 3412 NRL02

WT: 6.90

CAGE TIME: 3:30 15MIN 3 30MIN___45MIN___1HR___1.25HR___1.5HR___1.75HR___2HR___

					[redacted]	
	BCS: 2.5				Small dehiscences in the middles of the sutures. Five	
					stum, clean + dry with nice scab, no signs of	
					picking, both buttons have healed well, very mild	
					erythemas + dyscoloration around it. (B) RHDy abrasion	
					of finger tip, superficial, CTD, healing well	[redacted]
				[redacted]	Recd for neuro recording W/O# 3412	
					NRL02. performed sedated recording	
					returned to home cage	[redacted]

① LG [redacted] 11/6/18 ② L.C. 11/7/18 [redacted]

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/30/18		G	G	N	SO BAR, ate supps, implant C+D; active in cg	[redacted]
10/31/18		G	G	N	SO: BAR, ate supps, implant C+D, scab or glue pulled up. Active in cage.	[redacted]
11/1/18		G	G	N	SO: BAR, ATS pulled @ head, shaking slightly?	[redacted]
11/ 1/18	MMU [redacted]	/ 0.8 CC KET IM , D→ SURGERY			W/O 3290	
WT: 6.96	CAGE TIME: 3.30 15MIN 2 30MIN 3 45MIN__ 1HR__ 1.25HR__ 1.5HR__ 1.75HR__ 2HR_					
11/1/18					SO. Received in SX per WO#3290 for NRLØZ recordings. Cleaned implants & removed suture that was sticking out of incision. Incision healing & scabbed. Performed neural recordings & returned to [redacted] after recordings. SO2: gave add. O. 50mL Ket IM during record.	[redacted]
					Animal # [redacted] Room#: [redacted]	
① 10/18/19		G	G	SS	SO: BAR, RE: Blood on floor. Clean cage, no blood in cage. No trauma. NEPD. Ate supps. P: Clean cage stable animal uncontrolled blood in cage - NEPD P: CTM on MH	[redacted]
11-5-18		G	G	N	SO: BAR OP: Cranial implant: implants C+D, some scabbing around edge of skin. No Erythema, swelling noted. NEPD.	[redacted]
11-6-18		G	G	CC	SO: BAR OP: Cranial implant: Implants C+D No change from 11-5-18.	[redacted]
					SO: BAR AAR: RHD4 bleeding nail bed; RHD4	[redacted]

① Late Entry [redacted] 11-6-18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 4

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/25/18					INCISION IS CDI	
MMU [redacted] 6yrs 5mos 7.06kg NRL02 F					A: Good postop recovery - bilat cranial implant w/ electrodes	
Fiber Inulin 2.00 chw/animal Dose; 2. Chew Total Dose					P: CTM closely on PO, offer supps to encourage intake (10/28) cont inulin fiber dos for a few days (10/30)	
2.00 Chew Volume; PO Rte; SID Freq; 6 Days; Start 10-25-2018					Maropitant (10/25), Dexamethasone & Levetiracetam (10/27) Famotidine (10/27) Cefazolin (10/28)	[redacted]
MMU [redacted] 6yrs 5mos 7.11kg NRL02 F						
Boost 1.00 bottle(.5L)/anim Dose; 1. Bottle(.5L) Total Dose						
1.00 Bottle(.5L) Volume; PO Rte; SID Freq; 7 Days; Start [redacted]R-2018						[redacted]
MMU [redacted] 6yrs 5mos 7.11kg NRL02 F						
Maropitant 10 mg/mL 1.00 mg/kg Dose; 7.1 mg Total Dose						
0.70 mLs Volume; SC Rte; SID Freq; 5 Days; Start 10-21-2018 End 10-25-2018						[redacted]
10/26/18	[redacted]	F	G	N	SO: BAR Fair amt of stool under cage. Animal is alert & active. No defecits. Eating supps well doesn't like respiratory of item eating chow. A/P see 10/25	[redacted]
10/27/18		P/F	G	N	SO: BAR, active & moving well. Incision CDI. Ate all supps & drank all boost.	[redacted]
10/28/18		G	G	N	SO: BAR, incision CDI, ate all supps, drank all boost.	[redacted]
10/29/18		P	G	N	SO: BAR, ate nuts; implant CDI; good mvmt/ ingestion; ots CDI by scabbing	[redacted]
10/30/18		F	G	N	SO: BAR Animal reading ate dates, chewnos & fig bars. Fair amt stool under cage A: Stable post op. P: Monitor daily on CP until moved home after recovery	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/24/18					Animal's posture is more upright	
					today A: Cont good post op recovery	
					from bilateral cranial implant w/	
					electrodes P: Finish analgesics &	
					benadryl today. Cont Dexameth & Keppra	
					~~today~~ ① (10/27), Fenitrine (10/27), naropin	
					(10/24) ①, efedrin (10/28)	
					(consider stopping naropin 10/25)	
					SO: Animal was obs. scratching chest &	
					inf. region @ morning health check but	
					no scratching obs after benadryl &	[redacted]
					SO3 (3 pm) Animal drank a whole	
					package of boost, eat some PC,	
					dates, dried apricots, snap peas	
					fig bars. Very little stool this pm.	
					P: Offer multi dots & [illegible] see above	[redacted]
					SO: Animal noted scratching several	
					times today - opioids & benadryl	
					end 10/25	[redacted]
10/25/18		F/Low	N		SO: POAR animal has (ar cut of	
					stool. Mentation is good. Activity	
					is also good. Animal was noted	
					(or picture @ surgical site on &	
					around incision & implant repeatedly	
					AM: noted some scratching on	
					lower back even though opioids	
					ended yesterday. Readily ate	
					lots of rice cereal this am	

① RE [redacted] 10/24/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
10/22/18					SO: Per DVM, administered preventative	
					Dexamethasone dose (0.70mL IM) for	
					bilateral cranial implant procedure.	
					A/P: see previous entry.	[redacted]
10/23/18					MMU [redacted] F 6yrs 4mos 7.06kg NRL02 Diphenhydramine 50 mg/mL 3.00 mg/kg Dose — 21 mg Total Dose 0.40 mLs Volume — IM Rte — BID Freq — 2 Days Start 10-23-2018 — End 10-24-2018 SO: Noted animal	
					scratching intermittently	
					probably due to	
					opioid admin	
					P: Bmadin x 2d	[redacted]
10/23/18		G	G	N	SO: BAR Animal is fairly bright	[redacted]
					just seemed to notice animal in	
					the next cage. Seems to be preening	
					to that animal (via the mirror)	
					Animal is eating lots of moving	
					around the cage well	
					A: Excellent post op recovery. P: GIM	
					closely. Offer supps to encourage	
					intake (cont chalogesic & Metacam	
					K10/24) Dexamethasone (10/27), Keflora (10/27)	
					Cefuroxim (10/28), Famotidine (10/27)	
					Maropitant (10/27) - but consider	
					stopping soonest	[redacted]
10/24/18		F	G	N	SO: BAR Animal is bright & active	
					- no neurological signs obs. The animal did	
					not eat quite as much later yesterday	
					as fresh supps & greater variety	
					were not offered as much. Some amt	
					of stool under cage. Incision CDI	

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/22/18						

MMU [redacted] F
6yrs 4mos 7.11kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .21 mg Total Dose
0.70 mLs Volume — IM Rte, SID Freq, 3 Days
Start 10-22-2018 — End 10-24-2018
give as PM dose only

0.15 mg/kg Dose — 1.1 mg Total Dose
0.11 mLs Volume — IM Rte, TID Freq, 3 Days
Start 10-22-2018 — End 10-24-2018
check with sx tech for time of first dose

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 178 mg Total Dose
0.50 mLs Volume — IM Rte, BID Freq, 7 Days
Start 10-22-2018 — End 10-28-2018

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 7.1 mg Total Dose
0.70 mLs Volume — IM Rte, SID Freq, 1 Days
Start 10-21-2018 — End 10-21-2018
Modified
Dose Ovrd, Modified | GIVE

Dexamethasone 10 mg/mL
0.50 mg/kg Dose — 3.6 mg Total Dose
0.36 mLs Volume — IM Rte, SID Freq, 2 Days
Start 10-25-2018 — End 10-26-2018
Dose Ovrd

Maropitant 10 mg/mL
1.00 mg/kg Dose — 7.1 mg Total Dose
0.70 mLs Volume — SC Rte, SID Freq, 7 Days
Start 10-21-2018 — End 10-27-2018
Modified
10/21 DOSE GIVE IN

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 213 mg Total Dose
2.10 mLs Volume — PO Rte, BID Freq, 2 Days
Start 10-23-2018 — End 10-24-2018
Modified
Modified, Dose Ovrd

MMU [redacted] F
6yrs 4mos 7.11kg NRL02

Boost
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte, SID Freq, 4 Days
Start 10-22-2018 — End 10-25-2018
BOOST SOAKED CHOW PLEASE

Rice Cereal
Dose — Total Dose
Volume — PO Rte, SID Freq, 6 Days
Start 10-22-2018 — End 10-27-2018

1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte, SID Freq, 7 Days
Start 10-22-2018 — End 10-28-2018
(1602)

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5.3 mg Total Dose
0.50 mLs Volume — IM Rte, SID Freq, 1 Days
Start 10-22-2018 — End 10-22-2018
PLEASE have ready for SX to give

Dexamethasone 10 mg/mL
0.25 mg/kg Dose — 1.8 mg Total Dose
0.18 mLs Volume — IM Rte, SID Freq, 1 Days
Start 10-27-2018 — End 10-27-2018
Dose Ovrd

Levetiracetam 100 mg/mL
10.00 mg/kg Dose — 71 mg Total Dose
0.70 mLs Volume — PO Rte, SID Freq, 1 Days
Start 10-21-2018 — End 10-21-2018
Modified
Modified, GIVE

MMU 42904 [redacted] F
6yrs 4mos 7.06kg NRL02

Levetiracetam 100 mg/mL
10.00 mg/kg Dose — 71 mg Total Dose
0.70 mLs Volume — PO Rte, BID Freq, 3 Days
Start 10-25-2018 — End 10-27-2018

MMU [redacted] F
6yrs 4mos 7.11kg NRL02

Prunes
Dose — Total Dose
Volume — PO Rte, SID Freq, 4 Days
Start 10-22-2018 — End 10-25-2018

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte, SID Freq, 7 Days
Start 10-22-2018 — End 10-28-2018

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte, SID Freq, 3 Days
Start 10-22-2018 — End 10-24-2018
(1602)

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5.3 mg Total Dose
0.50 mLs Volume — IM Rte, SID Freq, 2 Days
Start 10-23-2018 — End 10-24-2018

Famotidine 10 mg/mL
0.50 mg/kg Dose — 3.6 mg Total Dose
0.36 mLs Volume — IM Rte, SID Freq, 7 Days
Start 10-21-2018 — End 10-27-2018
Modified
Modified 10/21, DOSE GIVE IN

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 213 mg Total Dose
2.10 mLs Volume — PO Rte, BID Freq, 1 Days
Start 10-22-2018 — End 10-22-2018
Dose Ovrd | PLEASE have ready for SX to give

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody
Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/26/18		G	G	N	SO: BAR PE: lip trauma, superficial scratches noted on both upper + lower lips - c + D, Ø tx indicated @ this time. A: minor lip trauma (suspect fair fight) P: No tx. @ this time, CTM on MH.	[redacted]
10/2/18					✓pre-project physical __pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]

MMU [redacted] F
6yrs 5mos 7.32kg NRL02
Long Term Peanuts
1.00 serving/animal Dose — 1. serving Total Dose
1.00 serving Volume — PO Rte SID Freq 180 Days
10-02-2018 End 03-30-2019

10/2/18 MMU [redacted] 0.8 KET IM, BLED 3ML. D → 1310 NRL02 W.O. 3021
WT:
CAGE TIME 11:15 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___

10/3/18 MMU [redacted] BOX LOAD INTO TRANSPORT TRUCK NRL02 W.O. 3045
WT:
CAGE TIME 12:30 15MIN 3 30MIN___ 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___

[redacted]

SO: Transported to [redacted] for MRI, project NRL02
WO# 3045. Sedated with ketamine 0.8 mls,
Animal (was) / was not placed in Stereotax,
performed MRI per protocol, recovered fully,
returned to CNPRC home cage.
Animal (did)/did not receive Ketoprofen or
Buprenex IM

[redacted]

10/10/18 7.11 BOX WT VET REQUEST [redacted]

10/22/18 MMU [redacted] 0.7 MLS KET, ~> SURGERY PREP W/O 3210 NRL02
WT: 7.06

[redacted]

10/22/18
SO: Rec'd in [redacted] prep wo# 3210, project NRL02
Surgically prepped, performed Bilateral cranial implants
See anesthesia log & surgery report. Recovered,
returned to home cage. Monitored until fully alert.
A: Bilateral cranial implants
P: POM X 7 days, Start RX

✓Charges ✓Admit ✓RX ✓Supps ✓Move Sheet
✓Surgery Log ✓Anesthesia Log ✓Surgery Report

[redacted]

Obs Form 12-16 ---- G – Good, F – Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody
... Minamazole 5.0 mg/ml; Diazepam 5.0mg/ml

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location [redacted] Date of exam: 12/9/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL03

Negative TB Test Date: 12/9/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: ~~99.4~~ 16.00 (1) Temp: 99.4 HR: 140 RR: 40 BCS: 4.0 Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	Scaled tartar
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	Mild epaxial M. atrophy
Thoracic Auscultation	NAO	A	NE	Grade III/VI L side basilar heart murmur
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: vasectomy (12/17); minor traumas - resolved

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - NR; Chem - NR

Imaging studies: (to be completed by Veterinary staff)

Date: 11/4/20 Radiographs: U/S exam: Echo

Comments: Mild LVH Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
____ Approved for project pending lab review
X Approved for shipment
____ Stable weanling
____ Other

Comments:

Examining Veterinarian [redacted] Date: 12/11/20

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

(1) Wrote on wrong field. Correct wt = 16.00 kg 12/9/20 [redacted]

5740

☐ VIRAL PRECAUTION

B259 / NRL03
I.D. / PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR / REQUESTOR

HEMATOLOGY

12 / 9 / 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM / CAGE

M — SEX
9 YR 9 MO — AGE
16.7 KG — WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-shipment

HOSPITALIZED ☐ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	13.9	X 10 ^3/ µl
RBC	5.03	X 10 ^6/ µl
HEMOGLOBIN	11.7	gm/dl
HEMATOCRIT	35.7	%
MCV	71	fl
MCH	23.2	pg
MCHC	32.6	pg/fl
PLATELETS	3.21	X 10 ^5/ µl
☐ RETICULOCYTES	%	____ X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.5	gm/dl
☐ FIBRINOGEN	100	mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 13.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	70	9730
LYMPHOCYTES	21	2919
MONOCYTES	8	1112
EOSINOPHILS	1	139
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 12/9/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

3545

☐ VIRAL PRECAUTION

BZ59, NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

12, 9, 20
DATE OF SAMPLE

M 9 YR 9 MO 16.7 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-shipment

HOSPITALIZED NO ☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED☐ ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	148	mM/L	15		CPK (S,HP)	461	U/L	25		pH		
2		POTASSIUM (S,HP)	3.3	mM/L	16		ALK PHOS (S,HP)	70	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	41	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	564	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	20		19		CHOLESTEROL (S,HP)	135	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.4	mg/dl	20		TRIGLYCERIDE (S,HP)	35	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.8	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	16	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	67	mg/dl	24		hsCRP	2	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.2	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.7	g/dl										
13		ALT (S,HP)	32	U/L										
14		AST (S,HP)	38	U/L										

REPORTED BY [redacted] DATE 12/10/20

PERFORMED BY: CNPRC X VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 7/24/18
Wt (kg): 14.3 Age: 7 yr Sex: (M)/F Procedure: MRI- [redacted] ET Tube size: 6mm
Investigator: [redacted] W/O# 2243 Project: [redacted] IV Catheter Placement: (R) Saph

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	1.5 mls	IM	8:31a	Ketoprofen	0.7mls	IM	8:20a

Fluid Type LRS **Additives:** Ø Temp Probe: Y/(N) Blood pressure Cuff: Y/(N)
HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP —

Time:	8:32a	8:50a	9:05a	9:20a
Temp:				
160				
150				
140				
135				
130	•			
125				
120		•		
115			•	•
110				
105				
100	✓	✓	✓	✓
95				
90				
85				
80				
75				
70				
65				
60				
55				
50	X	x	x	X
45				
40				
35				
30				
25				
20				
15	O	⊗	⊗	⊗
10				
SIGH				
Fluids total/rate	Total: 75mls			
CRI: N/A				
Iso FI (%)/ Oxygen (L)	1.5% / 1.5L	1.5% / 1.5L	1.5% / 1.5L	1.5% / 1.5L

Complete

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

exp

2408

BZ59 / NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

5 / 11 / 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M SEX | 7 YR 2 MO AGE | 13.3 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☒ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= / µl
CD8= / µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	10.9	X 10 ^3/ µl
RBC	5.26	X 10 ^6/ µl
HEMOGLOBIN	11.9	gm/dl
HEMATOCRIT	37.0	%
MCV	70	fl
MCH	22.6	pg
MCHC	32.2	pg/fl
PLATELETS	3.50	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.2 gm/dl

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 10.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	68	7412
LYMPHOCYTES	31	3379
MONOCYTES		
EOSINOPHILS	1	109
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 5/11/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

ex

1052

BZ59 / NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

5 / 11 / 18
DATE OF SAMPLE

M 7 YR 2 MO 13.3 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO ☒ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA

#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	146	mM/L	15		CPK (S,HP)	281	U/L
2		POTASSIUM (S,HP)	3.9	mM/L	16		ALK PHOS (S,HP)	113	U/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	39	U/L
4		TCO_2 (S,HP)	27	mM/L	18		LDH (SHP)	253	U/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	123	mg/dl
6		PHOSPHOROUS (S)	5.7	mg/dl	20		TRIGLYCERIDE (S,HP)	44	mg/dl
7		CALCIUM (SHP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.1	mg/dl
9		CREATININE (S,HP)	0.7	mg/dl	23		INDIRECT		mg/dl
10		GLUCOSE (S,P,HP)	72	mg/dl	24		hsCRP	2	mg/l
11		TOTAL PROTEIN (S)	6.6	g/dl					
12		ALBUMIN (S)	4.4	g/dl					
13		ALT (S,HP)	32	U/L					
14		AST (S,HP)	35	U/L					

URINE

#	✓	TEST	RESULTS	UNITS
25		pH		
26		SODIUM		mmol/L
27		POTASSIUM		mmol/L
28		CHLORIDE		mmol/L
29		PHOSPHOROUS		mg/dl
30		CALCIUM		mg/dl
31		MAGNESIUM		mg/dl
32		CREATININE		mg/dl
33		MICRO PROTEIN		mg/dl
34		P/C RATIO		mg/dl
35		OSMOLALITY		mOsm/kg

REPORTED BY [redacted] DATE: 5/11/18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

2014

[redacted]

Physical Exam Certificate
California National Primate Research Center

Animal number: MMu [redacted] Location [redacted] Date of exam: 9/28/17

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL01 < Lg scale Brain-Machine Interface

Negative TB Test Date: 9/28/17

Physical exam findings: (to be completed by Veterinary staff)

Weight: 1284 Temp: 100 HR: 160 RR: 28 BCS: 2- Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 9/28/17 Dates Reviewed: All Reviewers initials [redacted]

Comments: M. has trauma - resolved.

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/28/17 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - WNL
Chem - WNL

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

[redacted] Approved for project Comments:

_____ Approved for project pending lab review

_____ Approved for shipment

_____ Stable weanling

_____ Other

Examining Veterinarian [redacted] Date: 10/4/17

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 12/18/2017

PROCEDURE: Vasectomy - Autoligation	ROOM [redacted]	AGE: 6y 10m
INVESTIGATOR [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR [redacted]	W/0: 4118	WT: 12.3 KG

SNOMED CODES		CODED BY:	SNOMED TERMS
Circle one : Experimental (XI) / Colony (SN)			
T-78800	P-11070	Vasectomy	

DESCRIPTION OF PROCEDURES PERFORMED

An approximately 2 cm incision was made just caudal to each inguinal ring over the spermatic cord through the skin, subcutaneous tissues and tunica vaginalis. The vas deferens were bluntly dissected free. The vas deferens were transected, and the testicular ends were tied in an autoligation knot for occlusion. 3-0 Vicryl ligatures were placed on both the testicular and prostatic ends. The tunica was closed with 3.0 Vicryl in a simple continuous pattern. The skin was closed using 3.0 Vicryl in an intradermal pattern.

	POST OPERATIVE CARE: CIRCLE BELOW
TIME IN: 840 TIME OUT: 849	BUPRENEX IM SID X 1 DAY (given peri operatively) KETOPROFEN IM SID x 3 DAYS

SURGEON:	ASSISTANT:	ANESTHETIST:
[redacted]	[redacted]	[redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

4884

☐ VIRAL PRECAUTION

I.D. / NRL01 PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted] ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

9 / 28 / 17 DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M SEX 6 YR AGE 7 MO 13.14 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL Ø

CLINICAL SIGNS / PROBLEMS: Pre Project PE

HOSPITALIZED ☐ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted 8 hrs ☒ Anesthetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	7.3	X 10 ^3/ µl
RBC	5.59	X 10 ^6/ µl
HEMOGLOBIN	12.4	gm/dl
HEMATOCRIT	38.0	%
MCV	68	fl
MCH	22.2	pg
MCHC	32.6	pg/fl
PLATELETS	2.23	X 10 ^5/ µl
☐ RETICULOCYTES	%	____ X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.5	gm/dl
☐ FIBRINOGEN	300	mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 7.3 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	52	3796
LYMPHOCYTES	41	2993
MONOCYTES	4	292
EOSINOPHILS	3	219
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

9/28/17 [redacted]

9/28/17 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9-28-17

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2415

☐ VIRAL PRECAUTION

I.D. _____ / NRL01 PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted] ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

9 / 28 / 17 DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M SEX 6 YR AGE 7 MO 13.14 KG WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: Pre Project PE

HOSPITALIZED NO☐ YES ☐ _____ - _____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☒ 8 HOURS COMMENTS: _____

SAMPLE: SERUM ☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	147	mM/L	15		CPK (S,HP)	1021	U/L	25		pH		
2		POTASSIUM (S,HP)	3.3	mM/L	16		ALK PHOS (S,HP)	150	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	40	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	26	mM/L	18		LDH (S,HP)	232	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	130	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.0	mg/dl	20		TRIGLYCERIDE (S,HP)	36	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.6	mg/dl	21		BILI TOTAL (S,HP)	0.4	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	20	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	70	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.9	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.8	g/dl										
13		ALT (S,HP)	31	U/L										
14		AST (S,HP)	29	U/L										

REPORTED BY [redacted] DATE: 9-28-17

PERFORMED BY: CNPRC ☑ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/9/20					__pre-project physical X pre-shipment physical __weaning physical	
					See associated P.E. sheet for additional information.	
						[redacted]
12.9.20	16.00				MMU [redacted] NRL03 W.O 3857 1.7 MLS KET IM / D→ 1310 / BLED 3 MLS TB TEST RIGHT EYE 24HR ✓ 48HR ✓ 72HR ✓ CAGE TIME: 2:00 15 MIN 2 30 MIN 3 45 MIN____ 60MIN____ 75MIN____ 1.5HR____ 90MIN____ 2HR____	
						[redacted]
12/10/20		F	G	N	S: PDAY Pe: Poor App (7 draw) 4 whole + 1 partial Char in cage, ate scratch/treats. Adequate normal stool in cages, just fed. A: Fair app 1st recent report suspect 2° to sedation 12/9 P: CTM on mlt No Tx at this time	[redacted]
12/10/20					Animal shipped to Neuralink	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamazole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/21/20					P: CTM via UH	[redacted]
10/16/20	16.96				Box weight	[redacted]
10/30/20	16.81				Box weight	[redacted]
11/5/20						
					Cardiologist guided echocardiogram preformed due to:	
					pre-shipment / pre-project / clinical / genetic	
					Preliminary results: (await final results)	
					Normal / Suspect	
					Comment: LVH(+) (final)	[redacted]
11.5.20	17.36				MMU [redacted] SPF01 WO 3406	
					1.7 ML KET / D→ 1302	
					CAGE TIME: 2.10	
					15MIN 2, 30MIN 3, 45MIN____, 1HR____	[redacted]
					1.25HR____, 1.5HR____, 1.75HR____, 2HR____	
11/13/20	16.65				Box Weight	[redacted]
11/19/20					SO: BAR AAR. ① toe caught trauma. MMU was able to climb down from perch. Active and bearing weight on phalanges. No visible swelling around digits. No toe nail avulsions visualized and no blood present. MMU readily took treats. MMU does not appear to be in pain/distress. Cage waking WNL.	
					A: stable MMU w/ L toe trauma	
					P: CTM on routine MHJ if swelling, erythema occurs. No tx needed consider analgesics.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000354

UCD 0317

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/24/20	16.24				Box weight	[redacted]
8/4/20					SO: BAR, AAR; dried blood @ R eye; circular, dried blood ring around OD, poss. minor trauma @ med. canthus. & attn. paid to area, mild irrith. gave oral rx. A: Minor pair trauma healing 2° int P: op vis ✓ 8/5, tx as indicated.	[redacted]
8/9/20		G	G	CC	SO: BAR focal erythema at medial canthus OD, no swelling, scalera at medial canthus has mild/mod erythema, no d/c, eye is open & appears comfortable no attention to area A: minor trauma, P: no tx indicated at this time	[redacted]
8/9/20		P/F	G	N	SO: BAR Rl: poor app ; Fchow left, NERD, readily took treats A: 1st recent report for poor app P: CTM on routine MH	[redacted]
8-21-20	16.25				[redacted] O 4 [redacted] 8/21/2020 ___mls Ket. BCS= 4.5 Tartar: 0 1 2 3 4 Teeth Scaled Y N TB Test: R L Eye 16.25 kg 24hr____ 48hr____ 72hr____ mild alopecia lower legs ANIMAL MONITORED UNTIL RECOVERED O RE BCS 4 [redacted] 8/21/20	[redacted]
9/21/20		G	G	N	SO: BAR, AAR Pair fight Due small divit like a tooth impression on ant. (R) shoulder; however, no other marks noted anywhere Additionally some hair was pulled out but this animal has a luxurious thick haircoat so it is diff to notice (saw on cage bottom) Animals were separated	[redacted]

9yrs 5mos 16.24kg NRL03 M

Meloxicam 1.5 mg/mL
0.20 mg/kg Dose — 3.3 mg Total Dose
2.20 mLs Volume — PO Rte — SID Freq — 1 Days
Start 08-04-2020 End 08-04-2020

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
① 11-14-19		G/F	G	cc	SO BAR RL: poor app. & chow: Animal Ate	
					9/8 chow. Ate all training supps and treats.	[redacted]
					NEPD A: poor → fair app. P: C tm on mt	
12-27-19	14.3					
1-10-20	14.5					
1-24-20	14.3					
2-7-20	14.4					
2-21-20	[redacted]				[redacted] 2/21/2020	
	1.2 mls Ket. BCS= 2.5				Tartar: 0 1 2 3 4 Teeth Scaled Y N	
	TB Test: R Eye				24hr — 48hr — 72hr —	
	Wt. 13.86					
					ANIMAL MONITORED UNTIL RECOVERED	

PHYSICAL EXAM

Date 2/21/20 Weight 13.86 BCS 2.5

HR 168 RR 42 TEMP 99.9 ☐ Project Code [redacted]

☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity Mild tartar, scaled
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NE

Animal may be unpaired or individually housed while receiving veterinary care [redacted]

3/6/20	14.1				Box weight	[redacted]
5/1/20	14.61				Box weight	
5/29/20	15.25				Box weight	
6/26/20	15.75				Box weight	
② 6/						

① L.E. [redacted] 12-23-19

Please Expose MIS mark [redacted] 7/24/20

Obs Form 12-16-2011 P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

/ml: Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

23-01594_000356

UCD 0319

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9-6-19	13.25				[redacted] [redacted] **9/6/2019**	
					1.6 mls Ket. BCS= 2.5 Tartar (0) 1 2 3 4 Teeth Scaled Y N	
					TB Test: (R) L Eye 24hr ___ 48hr ___ 72hr ___	
					Patchy Alopecia Arms & Legs	
					grade 3 out of 6 systolic ~~Heart Murmur~~	
					Left Side Heart Murmur	
					mod muscle ↓ both hindlegs +	
					LS epaxial muscles. **ANIMAL MONITORED**	
					Good ROM Hips, Stifles **UNTIL RECOVERED**	[redacted]
9/7/19					SO: BAR Re: Poor appetite. Ate 3.5 chow and did/did not eat forage, did/did not eat fresh fruit / ~~treats~~.	
					A: Poor, Fair, Good appetite. 1ST recent ~~confirmed~~ report. Suspect 2° To Recent Sedation	
					P: CTM on MH / OP	
						[redacted]
9/20/19	13.8					
10/4/19	13.8				Box Weight	[redacted]
10-8-19		G	G	CC	SO BAR RE: (R) Arm red; Small pin point lesion on	
					medial (R) elbow ≈ 2mm. NO Bruising or swelling.	
					Animal seems to be resting alone.	
					A: Superficial lesion P: Ctm on MH.	[redacted]
10-9-19		G	G	CC	SO BAR RE: (R) Arm red No change; NO Δ's from	
					10-8-19. Animal active with NSPD.	
					A/P See above 10-8-19.	[redacted]
10/18/19	13.8				Box Weight	
11/1/19	13.8					
11/5/19					MMV [redacted] Moved to [redacted] Move # 19-780	
11/14/19	14.0					
11/27/19	14.3					
12/13/19	14.7				Box weight	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
					PHYSICAL EXAM	
					Date 2/25/19 Weight 12.73 BCS 2.0	
					HR 140 RR 26 TEMP 100.0 ☐ Project Code	
					1. Integument WNL - Minor alopecia arms ☐ Shave Tattoo	
					2. Oral Cavity WNL - polished teeth	
					3. Eyes WNL 4. Ears WNL	
					5. Musculoskeletal WNL	
					6. Thorax Auscultation WNL - clear	
					7. Abdominal Palpation WNL	
					8. Spleen WNL 9. Liver WNL	
					10. Lymph Nodes WNL	
					11. Urogenital WNL	
					12. Rectal Palpation Ø	
					Animal may be unpaired or individually housed while receiving veterinary care	
					S: brought sedated for routine RU	
					A: Apparently stable animal	
					P: CTM on MH	[redacted]
2/25/19					1.3 MLS KETAMINE IM, BLED ____ MLS, ROOM ROUND UP	
					TB TEST LEFT EYE 24HR ✓ 48HR ✓ 72HR ✓, ANIMAL MONITORED UNTIL RECOVERED	
WT: 12.73						[redacted]
3/8/19	13.3					
3/22/19	14.1					
4/11/19					moved to [redacted]	
4/24/19					Moved to [redacted]; Mo# 19-260	
5/3/19	13.2					
5/17/19	13.8					
6/28/19	13.1					
7/12/19	15.5					
7/26/19	12.9					
8/9/19	13.5					
8/23/19	13.3					

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
9/19/18	cont				A: Stable canine without sedation	
					recheck	
					P: Re-check canine at next sedation	
					CTM on MH	[redacted]
9/21/18	13.5					[redacted]
10/5/18	12.74					[redacted]
10/6/18					SD: BAR 2 animals escaped enclosure in room.	
					No digit, facial or body trauma noted.	
					A: NEPD P: CTM on MH.	[redacted]
10/19/18	13.60					[redacted]
11/2/18	12.9					[redacted]
11/16/18	13.30					[redacted]
11/30/18	13.4					[redacted]
12/14/18	13.50					[redacted]
1/11/19	13.30					[redacted]
1/25/19	13.2					[redacted]
2/8/19	13.0					[redacted]
2/16/19					SD: Reported no trail access 12-15hr. Observed	
		G	G	N	animal. Well hydrated, ate all	
					supps, chow. Normal stool, urine.	
					No indication for NOVA at this	
					time. Notified Vet, Lab.	[redacted]
2/22/19	13.4					[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/20/18					MMU [redacted], LOC [redacted], 0.74 MLS ~~KET~~ TEL IM W.O. 2199	[redacted]
WT:					CAGE TIME 1:35 15MIN / 30MIN / 45MIN / 1HR / 1.25HR 2 1.5HR 3 1.75HR ___ 2HR ___	
7/24/18					SO: Transported to [redacted] for MRI, project NRL02 WO# 2243 Sedated with ketamine 1.6 mls, Animal was/was not placed in Steriotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal did/did not receive Ketoprofen IM 0.7 mls head circum. 35.1 cm	[redacted]
7/24/18					MMU [redacted] BOX/LOAD & RETURN NRL02	
WT:						[redacted]
7/27/18	12.6					
8/10/18	12.6					
8/10/18					Cardiologist-guided echocardiogram performed due to: pre-shipment / pre-project / clinical Preliminary Results: Normal / LVH / Suspect (await final results) Comments: Final Echo Result: **LVH Positive**	[redacted]
8/10/18					MMU [redacted] 1.4 MLS KET IM, D→ 1302 SPF01 W.O. 2437	
WT:	12.61				CAGE TIME 1:45 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	[redacted]
8/24/18	15.70					[redacted]
9/7/18	13.10					
9/19/18		G	G	N	SO: BAR: AAR: cracked canine re-check. No swelling or erythema at mouth. Cannot visualize canines. NFPD.	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
					PHYSICAL EXAM	
					Date 5/11/18 Cont. Weight 13.21 BCS 2.0	
					HR 126 RR 30 TEMP 99.6°F ☐ Project Code	
					1. Integument WNL ☒ Shave Tattoo	
					2. Oral Cavity Broken/chipped 104, Mild tartar noted.	
					3. Eyes WNL clear 4. Ears WNL	
					5. Musculoskeletal WNL	
					6. Thorax Auscultation WNL	
					7. Abdominal Palpation WNL	
					8. Spleen WNL 9. Liver WNL	
					10. Lymph Nodes WNL	
					11. Urogenital WNL	
					12. Rectal Palpation Not performed.	
					Animal may be unpaired or individually housed while receiving veterinary care.	
					sealed w/ kit. scaled & polished teeth before repair. Mild tartar noted. Consulted w/ Lab staff collected & submitted blood work	
					Samples Collected	
					Date: 5/11/18	
					R/C SS CBC Chem20	
					Vol. blood 3.0ml	
					Other: + Nova.	
					Reversed MMU & recovered in home cage. A: Stable MMU P: CTM via routine MH & await labs.	

NOVA results:
pH: 7.421 Hct: 37
HCO3: 24.2 Na: 146.4 K: 3.74
Glu: 74 BUN: 15
Creat: 0.9

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/14/18					CBC and chemistry from 5/11 show no clinically significant changes A: Stable animal, exposed dentin sealed to prevent tooth sensitivity P: CTM on routine MH	
5/18/18	13.4					
10/1/18	13.1					
6/28/18		G	G	N	SO: BAR (P) Re: vomit. lab making chow slurry for training purposes. Vomit on floor in slurry. A: unconfirmed emesis report P: CTM or MH	
6/29/18	12.8					
7/13/18	12.9					
7/20/18					CT SCAN NRLOI	

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/5/18					erythema. Clear nasal discharge	
					present as well. No sneezing or coughing	
					NEPD. Active.	
					A: Confirmed clear nasal d/c w/	
					minor (L) nare abrasion 3rd report	
					P: CTM on MH	[redacted]
3/9/18	12.70					[redacted]
3/11/18		G	G	CC	SO: BAR Re: crusty nose, nasal discharge; nose	
					was clear & dry, NEPD A: possible nasal d/c,	
					intermittent recent reports P: CTM	[redacted]
3/12/18		?	G	N	SO: BAR Re: nasal d/c - unconfirmed, NEPD	
					A: several recent intermittent reports P: CTM,	
					consider further work-up if continues	[redacted]
3/23/18	13.2					[redacted]
4/6/18	12.97				1.3cc Ket; Bled 3cc SD; TB TEST (LEFT EYE) / RIGHT EYE 24HR ___ 48HR ___ 72HR ___	
					ANIMAL MONITORED	
					UNTIL RECOVERED	[redacted]
4/20/18	13.1					[redacted]
5/9/18	13.3					[redacted]
5/9/18		G	G	N	SO: BAR ~~AAR~~: Possible cracked K9, avoiding hard	
					foods, pale face. MMH active & moving well. Readily	
					took & ate treats. Unable to properly visualize	
					canines. A: NEPD @ time of observation. P: CTM on	
					MH, consider sedation @ next report.	[redacted]
5/11/18		G	G	N	SO: BAR lab member concerned, MMH only ate 5 chow.	
					Would like oral exam/sedated exam. Sedated MMH	
					w/ ketatime 0.8ml, Dexmed/Atip 0.3ml IM. Noted sm.	
					enamel chip @ (L) upper canine (104), Exposed dentin,	

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/20/17		G	G	N	SO: BAR, STS CDI, PS = Φ	[redacted]
12/21/17					moved → [redacted] per moved # 17-8116	[redacted]
12/21/17		G	G	N	SO: BAR, OPM: Vasectomy. Sts are	
					CDT, w/mild erythema. Moving	
					well. A: Stable post sx P: CTM	[redacted]
12/22/17		G	G	CC	SO: BAR OPM: Vasectomy. Incisions appear CDI	
					w/ mild erythema noted. A: Healing incisions. P: CTM	
					on OP.	[redacted]
12/23/17		F	G	N	SO: BAR, OPM: Vasectomy. Sts: CDT	
					w/mild erythema at incision, lo chow	
					in cage, ate scratch tock treats,	
					adequate normal stool. A: Healing	
					incisions P: CTM on OPM	[redacted]
12/24/17		F	G	N	SO: BAR OPM: Vasectomy. Incisions appear CDI.	
D/C					A: Healing/healed incisions. P: D/c from OP, CTM on ~~MH~~ MH.	[redacted]
2/14/18		G	G	N	SO: BAR, Re: Poor appetite. Ate 7 chow and did/did not eat forage, did/did not eat fresh fruit. A: Poor, Fair, Good appetite. — recent confirmed report. P: CTM on MH and/or OP	[redacted]
2/23/18	12.4				Box weight	[redacted]
2/24/18		G	G	N	SO: BAR (P) Re: Nasal discharge. Noted clear	
					nasal d/c. No sneezing noted during time of	
					observation. A: Confirmed report, NEPD. P: CTM on	
					MH	[redacted]
2/27/18		G	G	N	SO: BAR (P) Re: Sneezing + Nasal d/c. Noted clear +	
					bloody nasal d/c. A: NEPD, 2nd recent confirmed report.	[redacted]
3/5/18		F	G	N	SO: BAR, (P) Re: Nasal discharge. (L)	
					Nare has mild abrasion C+D w/mild	

① EE. Wrote in correct letters. 12/24/17 [redacted].

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 4/

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9-28-17	12.84				[redacted] [redacted] **9/28/2017** 1.3mls Ket. BCS= 2 Tartar: 0 1 2 3 4 Teeth Scaled Y N TB Test: R L Eye 24hr__ 48hr__ 72hr__	[redacted]
					ANIMAL MONITORED UNTIL RECOVERED	
					moved → [redacted] mv # 17-613	
11/29/17	12.13				Box wt	[redacted]
12/5/17					moved to [redacted]	
12/18/17					moved → [redacted] per WO# 4118	

12/18/17 MMU 46137 EX141-1 / 1.3 CC KETAMINE IM, D→SURGERY , NRL02 WO#4118

WT: 11.90

12/18/17

MMU [redacted] M
6yrs 10mos 12.13kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .36 mg Total Dose

1.20 mLs Volume — IM Rte — SID Freq — 1 Days
Start 12-18-2017 End 12-18-2017

Dose Ovrd | sx tech gave dose

MMU [redacted] M
6yrs 10mos 12.13kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 60.7 mg Total Dose

0.60 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-18-2017 End 12-20-2017

sx tech gave 12/18

DATE: 12/18/17
SO: Animal was delivered sedated to [redacted] prep. Gave 0.3 ml Dexm/Atip IM. The caudal abdomen & inguinal area were clipped and surgically prepped. SP02 was monitored throughout the procedure. See procedure report for details.
A: Vasectomy
P: Visually check inguinal incisions daily via routine hospital morning health. Start RX

monitored until fully alert

[redacted]

12-19-17		G	G	CC	SO: BAR: OP: Vasectomy; Animal Active with NEPO. Sts (x2) ARE CDI with mild Bruising and Swelling at Sx sites. A: Stable Post Sx. P: Ctm.	[redacted]
N/A						

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000364

UCD 0327

Animal ID# [redacted]

California National Primate Research Center

Page # 3

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5/18/17	13.9				1.1 ml for in place cage sanitation. ANIMAL MONITORED UNTIL RECOVERED	[redacted]
5/23/17	13.7				MMU [redacted] LOC: [redacted] ~~KET~~ / TEL: 1.10 MLS CAGE TIME; 3:00pm 15MIN 1, 30MIN 2 45MIN 2 1HR 3 1.25HR____ 1.5HR____, 2 HR____ 1-LAYING DOWN, 2 MOVING, 3 SITTING UP) .	VACCINATED TETANUS Measles Vaccine: Vanguard Canine Distemper	[redacted]
5/24/17		P	G	cc	S: Bar Re: poor app(6) - confirmed A: poor app - likely 2° to recent sedation P: CTM w/ mult consider supp/dx if persists	[redacted]
6/5/17	12.96				DATE: 6/5/17 WT 12.96kg **MMU:** [redacted] **Project:** OVA01 Ketamine: 1.0 ml; **WO # 1610** Bled 10 ml red top. **(1 sedated) (2 moving) (3 sitting up)** Cage Time: 3 15min.__ 30min.__ 45min__ 60min.__ 1.25hr.__ 1.5 hr.__ 1.75hr.__ 2hr.__	[redacted]
7-11-17 7/11/17					1.03 cc Telazol → CT w/o 2126 CT scan ✗	[redacted]
					ANI # [redacted] LOC [redacted] DATE: 7-11-17 (1 sedate) (2 moving) (3 sitting up) 0 min 10:15 15MIN 1, 30MIN 1, 45MIN 2, 60MIN 3, 1.25HR____ 1.5HR____, 1.75HR____, 2HRS____	
7/21/17 7/21/17	12.67				1.3cc ket, bled 10ml → Dental Room per WO #2258 Received sedated, gave 0.3ml Dexmed/Atip IM. Obtained dental impressions.	[redacted]
9-6-17	13.14				Bx WT	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

4W

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

BZ59 / DRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

MMU [redacted]
ANIMAL I.D.

3 / 8 / 19
DATE OF SAMPLE

F 7 YR 11 MO 6.9 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Serous d/c from ⊕ pillbox
HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) serous d/c

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 3/11 4+ STAPH Coagulase positive
2. 3/11 Anaerobic 1+ Fusobacterium sp.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			S	S		⊕ ~~S~~	S		S

REPORTED BY: [redacted]

⊕ER [redacted] 3/12/19

REPORT DATE: 3/12/19

CLINICAL MICROBIOLOGY

2/2014

Post Operative monitoring record

Date: 12/17/18 Animal# MMU [redacted] Procedure: cranial implants

			Date	Date	Date	Date	Date	Date	Date
General Obervations			12/18	12/19	12/20/18	12/21/18	12/22	12/23	12/24
	Appetite		P/F	F	P/F	P/F	F	G	G
	Hydration		G	G	G	G	G	G	G
	Stool		N	N	~~B~~/N	N	N	N	N
	Incision		CDI	CDI	CDI	intact	CDI	CDI	CDI
		Score					[redacted]		
Physiologic parameters									
Pupils									
	Normal	0	0	0	0	0			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	0	0	0	0			
	Tachypnea	2							
Mucous membranes									
	Pink	0	0	0	0	0			
	Pale	2							
Posture									
	Sitting/standing upright	0	0	0	0	0			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0	0	0	0				
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	0	0	0	0			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score		0	0	0	0	0			
Initials:			[redacted]						

revised 7/2017

prior to sedation
(awake)

STP pHox Ultra

Printed: 12/24/2018 08:06:48 AM
Analyzed: 12/24/2018 08:04:33 AM
Analyzer ID: Z11818060N

Barometer	766.7 mmHg
Sample Type	Venous
Operator:	123456
Releaser:	auto
Patient ID:	[redacted]
Patient Name:	

Other Flags

Comments

Test	Value	Units	Flags
pH	7.186		
pCO2	92.6	mmHg	
pO2	52.7	mmHg	
SO2%	67.8		
Hct	41	%	
Hb	13.5	g/dL	
Na+	156.3	mmol/L	
K+	5.98	mmol/L	
Cl-	109.3	mmol/L	
Ca++	1.36	mmol/L	
Mg++	0.84	mmol/L	
Glu	79	mg/dL	
Lac	16.4	mmol/L	
BUN	21	mg/dL	
Creat	1.0	mg/dL	
TCO2	38.2	mmol/L	
nCa	1.21	mmol/L	
nMg	0.73	mmol/L	
Gap	11.6	mmol/L	
Ca++/Mg++	1.6	mol/mol	
BUN/Creat	21.5	mg/mg	
BE-ecf	6.9	mmol/L	
BE-b	4.5	mmol/L	
SBC	27.8	mmol/L	
HCO3-	35.4	mmol/L	
P50	31.1	mmHg	
O2Cap	18.7	mL/dL	
[illegible]	12.9	mL/dL	
A			

sedated

Sample Profile

STP pHox Ultra

Printed: 12/24/2018 09:11:56 AM
Analyzed: 12/24/2018 09:09:43 AM
Analyzer ID: Z11818060N

Barometer	766.8 mmHg
Sample Type	Venous
Operator:	123456
Releaser:	auto
Patient ID:	mmu [redacted]
Patient Name:	

Other Flags

Comments

Test	Value	Units	Flags
pH	7.423		
pCO2	49.6	mmHg	
pO2	64.7	mmHg	
SO2%	90.3		
Hct	35	%	
Hb	11.8	g/dL	
Na+	141.2	mmol/L	
K+	3.67	mmol/L	
Cl-	102.4	mmol/L	
Ca++	1.25	mmol/L	
Mg++	0.65	mmol/L	
Glu	78	mg/dL	
Lac	0.8	mmol/L	
BUN	17	mg/dL	
Creat	0.9	mg/dL	
TCO2	34.3	mmol/L	
nCa	1.26	mmol/L	
nMg	0.66	mmol/L	
Gap	6.0	mmol/L	
Ca++/Mg++	1.9	mol/mol	
BUN/Creat	19.8	mg/mg	
BE-ecf	8.1	mmol/L	
BE-b	7.8	mmol/L	
SBC	31.4	mmol/L	
HCO3-	32.7	mmol/L	
P50	26.9	mmHg	
O2Cap	16.4	mL/dL	
O2Ct	15.0	mL/dL	
A			
Osm			

5852

B259, NRU02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

12 / 17 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F 7 YR 8 MO 6.60 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre. Sx

HOSPITALIZED ☐ NO ☒ YES [redacted]
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	6.5	X 10 ^3/ µl
RBC	5.20	X 10 ^6/ µl
HEMOGLOBIN	13.0	gm/dl
HEMATOCRIT	38.6	%
MCV	74	fl
MCH	25.1	pg
MCHC	33.7	pg/fl
PLATELETS	2.32	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.6 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 6.5 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	61	3965
LYMPHOCYTES	39	2535
MONOCYTES		
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

12/17/18 [redacted]

12/17/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 12/17/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2532

☐ VIRAL PRECAUTION

B759 , NRU02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

CLINICAL BIOCHEMISTRY

12, 17, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 7 YR 8 MO 6.60 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
pre-
neuro Sx

HOSPITALIZED NO X YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X
HEMOLYZED ☐
ICTERIC ☐
LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	150	mM/L	15		CPK (S,HP)	510	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	189	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	48	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	22	mM/L	18		LDH (S,HP)	488	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	24		19		CHOLESTEROL (S,HP)	149	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	6.0	mg/dl	20		TRIGLYCERIDE (S,HP)	40	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.3	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	19	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	107	mg/dl	24		hsCRP	0	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.7	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.2	g/dl										
13		ALT (S,HP)	35	U/L										
14		AST (S,HP)	35	U/L										

REPORTED BY [redacted] DATE: 12/17/18

PERFORMED BY: CNPRC X VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 12 17 18

PROCEDURE: Cranial Implant	ROOM: [redacted]	AGE: 7y 8m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: F
REQUESTOR: [redacted]	W/O: 3899	WT: 6.4 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, fentanyl and propofol, the animal's head was placed into the stereotaxic frame. The head was sterilely prepped. Midline incision made approximately 6cm in length. Fascia incised and temporalis muscle elevated bilaterally from temporal ridges. Twenty millimeters anterolateral to bregma, burr holes were made bilaterally using a cranial perforator. Exposed dura was incised and reflected anteriorly. Electrode implants were placed using investigational robotics. Gelfoam and titanium plate were used to seal burr hole. This process was repeated on the right hemisphere. Two separate stab incisions were made 1.5cm off midline in the posterior portion of the exposure and transcutaneous ports were passed through the incision. The main midline incision was closed in an inverted, interrupted fashion using 3-0 vicryl in the fascia. The skin was closed using a running subcuticular stich using 4-0 monocryl. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss: minimal (<2cc).

	POST OPERATIVE CARE:
TIME IN: 8:54 am TIME OUT: 2:11 pm	Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days Dexamethasone SID x7 days Cefazolin BID x7 days Omeprazole SID x7 days Famotidine SID x3 days Levetiracetam BID x7 days

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center: Anesthesia Monitoring Sheet — Page 1 of

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 12/17/18 **Age:** 7y8m **Sex:** M / (F) **Wt. (Kg)** 6.70

Procedure: Cranial implant **ET Tube Size:** 5.0 **Investigator:** [redacted] **W/O#:** 3899 **Project/ID:** NRL02/BZ59

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Dexamethasone 0.70mL IM @ 820am

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
Atropine	0.60mL	IM	815	cefazolin	0.50mL	IV	850, 1052, 1250
Famotidine	0.33mL	IM	820	Hydromorphone	0.10mL	IM	215
Levetiracetam	2.0mL	PO	820	Cerenia	0.70mL	SQ	320

Del: 8:15 Sx Table: 8:30 Prep: 8:48 Start: 854 Cut: 903 Proc: 1003 - 142 Close: 142 - 211 Full Recovery: 259

Time	8:49	900	911	920	930	940	950	1000	1010	1020	1030	1045	1100	1115	1130	1145	1200	1219	1230	1245	100	115	130	145	200	220	240	255
Temp	100.7	99.3	99.2	99.0	98.8	98.6	98.4	98.3	98.2	97.9	97.7	97.8	98.1	99.1	99.4	99.5	99.5	99.3	99.0	99.4	99.4	99.2	99.0	98.8	98.9	98.9	98.7	98.7
150																												•
140	•																											
130			•																									
120		•		•	•	•	•								•										•	•		
110								•										•	•	•			•					
100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
90			▼												▼	▼									▼	▼		
80						▼	▼	▼	▼	▼	▼	▼	▼	▼			▼	▼	▼	▼	▼	▼		▼				
70	▼	▼		▼	▼																							
60																—							—		—	—		
55			—							—			—	—	—				—	—								×
50	—					—	—	—	—		—	—					—	—			—	—		—				
45	×			—	—													—							▲	▲		
40	▲	×	×	×																					×			
35			▲		×	×	×	×	×	×	×	×	×	×	▲ ×	×	×	×	×	×	×	×	▲	×		×	×	
30									▲	▲				▲		▲	▲		▲	▲				▲				
25		▲		▲	▲	▲	▲	▲			▲	▲	▲					▲			▲	▲						
20	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø		
15																											Ø	O
10																												
Sigh																												
Fluids: LRS Total/Rate	0 / 64	10.8 / 64	21.8 / 64	31.0 / 64	44.9 / 64	52.2 / 64	63.2 / 64	74.8 / 64	84.6 / 64	95.0 / 64	104 / 64	119 / 64	136 / 64	153 / 64	170 / 64	184 / 64	201 / 64	214 / 64	231 / 64	246 / 64	262 / 64	271 / 64	285 / 64	312 / 64	327 / 64	351 / 64	373 / 64	495 / 64
CRI: Fentanyl Total/Rate	0.68 / 6.4	1.76 / 6.4	2.86 / 6.4	3.84 / 6.4	5.17 / 6.4	5.9 / 6.4	7.1 / 6.4	8.17 / 6.4	9.4 / 6.4	10.2 / 6.4	11.1 / 6.4	12.6 / 6.4	14.3 / 6.4	15.9 / 6.4	17.7 / 6.4	19.6 / 6.2	20.7 / 6.2	22.1 / 6.2	23.6 / 6.2	25 / 6.2	26.6 / 6.2	28.2 / 6.2	29.8 / 6.2	31.5 / 6.2	32.9 / 6.2	Fentanyl off @ 2017	—	—
Iso FI (%) / O_2 (L)	2.4 / 1.9	1.7 / 1.5	2.3 / 1.5	1.7 / 2.0	1.5 / 2.0	1.7 / 2.0	1.4 / 2.0	1.3 / 2.0	1.2 / 2.0	1.2 / 2.0	1.2 / 2.0	1.2 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.1 / 2.0	1.3 / 2.0	1.3 / 2.0	1.1 / 2.0	0.84 / 2.0	0.0 / 2.0

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) **Initials** [redacted] rev.7/15-PC15A

UCD 0335

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 12/13/18
Wt (kg): 6.6 Age: 7 yr Sex: M/F Procedure: MRI [redacted] ET Tube size: 5.0mm
Investigator: [redacted] W/O# 3872 Project: [illegible] IV Catheter Placement: 0

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.7mls	IM	~12:45				
Ketoprofen	0.3mls	IM	~1pm				

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- **0**, Sys-**v**, Dias-**^**, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**0**) MAP --

Time:	100	122	138
Temp:			
160			
150	157		
140			
135		135	
130			
125			128
120			
115			
110			
105			
100	✓	✓	✓
95			
90			
85			
80			
75			
70			
65			
60			
55			
50	X	X	X
45			
40			
35			
30	O		
25			
20		O	O
15			
10			
SIGH			
Fluids total/rate	N/A		
CRI:	N/A		
Iso Fi (%)/ Oxygen (L)	1.7% / 2L	1.7% / 2L	1.7% / 2L

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

164

☐ VIRAL PRECAUTION

B259 / NRL02
I.D. / PROJECT CODE

[redacted]
INVESTIGATOR / REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

MMM [redacted]
ANIMAL I.D.

1 / 11 / 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM / CAGE

F — SEX
6 YR 9 MO — AGE
7.70 KG — WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐ NO ☐ YES ____ ROOM / CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	7.4	X 10 ^3/ µl
RBC	4.66	X 10 ^6/ µl
HEMOGLOBIN	11.4	gm/dl
HEMATOCRIT	34.9	%
MCV	75	ll
MCH	24.5	pg
MCHC	32.7	pg/ll
PLATELETS	2.64	X 10 ^5/ µl
☐ RETICULOCYTES	%	X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	6.6	gm/dl

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 7.4 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	69	5106
LYMPHOCYTES	26	1924
MONOCYTES	2	148
EOSINOPHILS	3	222
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

1/11/18 [redacted]

1/11/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 1-11-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

60

☐ VIRAL PRECAUTION

BZ59 , NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MLLL [redacted]
ANIMAL I.D.

1 , 11 , 18
DATE OF SAMPLE

F 6 YR 9 MO 7.7 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: _____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	144	mM/L	15		CPK (S,HP)	276	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	188	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	109	mM/L	17		GGT (S,HP)	34	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	199	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	14		19		CHOLESTEROL (S,HP)	142	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.5	mg/dl	20		TRIGLYCERIDE (S,HP)	52	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	16	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	72	mg/dl	24		hsCRP	0	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.6	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.3	g/dl										
13		ALT (S,HP)	20	U/L										
14		AST (S,HP)	21	U/L										

REPORTED BY [redacted] DATE: 1-11-18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU[redacted] Location: [redacted] Date of exam: 1/11/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: NBLPZ new Study

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 7.42 Temp: 100.5 HR: 168 RR: 30 BCS: 2.0 (+) Gender: M (F) Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	(NAO)	A	NE	
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 1/11/18 Dates Reviewed: all Reviewers initials: [redacted]

Comments: unremarkable

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 1/11/18 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: NSF

Imaging studies: (to be completed by Veterinary staff)

Date: 1/11/18 Radiographs: U/S exam: echo

Comments: No evidence of LVH Reviewers initials: [redacted]

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
X Approved for project pending lab review
____ Approved for shipment
____ Stable weanling
____ Other

Comments: NSF on blood work, approved for project.

Examining Veterinarian [redacted] Date: 1/18/18

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/20/19		?	G	SS	SO: BAR (P) OPM: int. head implant, Re: liq. stool; no liq. stool	
					seen post recent cage clean. No chow observed in enclosure.	
					No PBS or fibrl tots seen. Imp. + inc. appear CDI.	[redacted]
3/20/19					A: Cranial implant infection	
					P: Per consultation w/ project, euthanasia	[redacted]
					scheduled for 3/21/19	[redacted]
3/21/19	6.30				P: Tec Ketamine ⇒ Necropsy W/O 5094 NRL 02	[redacted]
					MMU [redacted] Returned to home cage per PATH STAFF REQUEST	
3/21/19 MMU [redacted] LOCATION [redacted] / 0.7 MLS KET						[redacted]
WT: CAGE TIME 9:45 15MIN / 30MIN X 45MIN 3 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___						[redacted]
3/21/19	6.25				IMM/D ⇒ N/Y .7KK W/O 5044	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
3/14/19 MMU [redacted] LOCATION [redacted] / 0.7 DELIVERED → MLS KET [redacted] w/o 4974 nl 02						[redacted]
WT: 6.51 CAGE TIME 2:50 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						
3/16/19		P	G	N SS L	SO: BAR OPM: inf. head imp., Re: liq. stool; 6.5 chow remaining, no interest in PBS. Small amount liq. stool. Suspect ? to abx tx. Imp. ↑ inc. CDI. A/P: see 3/12 entry.	[redacted]
3/17/19		P	G	N SS L	SO: BAR OPM: inf. head imp., Re: liq. stool; Inc ↑ imp. CDI. animal did not eat PBS. Ate fig bar offered, ate 3 chow. If repeats continue, consider R/c. A/P: see 3/12 entry.	[redacted]
3-18-19		G	G	L	SO: BAR OP: infected head implant. implants appear C+D. Animal Active NEPD. clindamycin ends 3-18-19. Suspect liq stool caused by abx.	[redacted]
3-19-19	①	P G	G	L	SO: BAR. OP: infected head implant: implants C+D. Liquid stool continues. Ate PBS Appetite Poor 0/8 chow eaten.	[redacted]

MMU [redacted] F
7yrs 11mos 6.51kg NRL02

Fiber Inulin
2.00 chw/animal Dose — 2. Chew Total Dose
2.00 Chew Volume — PO Rte — SID Freq — 14 Days
Start 03-16-2019 End 03-29-2019

MMU [redacted] F
7yrs 11mos 6.51kg NRL02

Clindamycin 150 mg/mL
12.50 mg/kg Dose — 81 mg Total Dose
0.50 mLs Volume — IM Rte — SID Freq — 1 Days
Start 03-18-2019 End 03-18-2019

MMU [redacted] F
7yrs 11mos 6.64kg NRL02

Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 199 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 10 Days
Start 03-19-2019 End 03-28-2019
[redacted]

MMU [redacted] F
7yrs 11mos 6.64kg NRL02

Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 199 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 0 Days
Start 03-19-2019 End 03-18-2019
[redacted]

MMU [redacted] F
7yrs 11mos 6.64kg NRL02

Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 199 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 10 Days
Start 03-18-2019 End 03-27-2019

① EG. [redacted] 3-19-19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
3.12.19					P: Start PDS	
					Start cephalexin on 3.18.19	
					Poultrex wound on 3.19.19 when sedated for cleaning	
					Clean twice a week	
					Talk w/investigator for plan (need to have one by 2 weeks)	[redacted]
					Admit ⊗ Prob. Sheet ⊗	

MMU [redacted] F
7yrs 11mos 6.64kg NRL02

Clindamycin 150 mg/mL
12.50 mg/kg Dose — 83 mg Total Dose
0.60 mLs Volume — IM Rte — TID Freq — 6 Days
Start 03-12-2019 End 03-17-2019
Weight Ovrd | First dose given at 2:00 PM on 3-12-2019

MMU [redacted] F
7yrs 11mos 6.64kg NRL02

Cephalexin 250 mg/caplet
30.00 mg/kg Dose — 199 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 10 Days
Start 03-18-2019 End 03-27-2019

MMU [redacted] F
7yrs 11mos 6.64kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose
1.00 sndwch Volume — PO Rte — BID Freq — 20 Days
Start 03-12-2019 End 03-31-2019

MJL C-119436-WO Ins12MAR:14:51 Prn12MAR:14:51

3/12/19 MMU [redacted] LOCATION [redacted] .7 MLS KET [redacted]
WT: 6.64 CAGE TIME 2.36 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___

3/14/19					Cranial Implant CLEANING 0.4 mls Ketamine 0.2 mls Dexmedetomidine/Atipamizole reversal or chaired cleaning Implant/post edges cleaned and hair trimmed Novlsan/Betadine was used to clean the implant. Discharge: (Y) N minimal Amount of discharge: Color: red cloudy Additional Treatment: Collected cytology per vet	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] **California National Primate Research Center** Page # 25

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
ANI # [redacted] LOC: [redacted] DATE: 3-1-19 (1 sedate) (2 moving) (3 sitting up)						
Cage time ~~0-min~~ 1.47 15min 1 30min 3 45min ___ 60min ___ 1.25hr ___ 1.5hr ___ 1.75hr ___ 2hr ___						[redacted]
3/8/19	U.S					
					Evaluate implant under sedation; (R) pill box small amount of granulation tissue cocadally, (L) side, small (drop) of serous cloudy discharge, no pocket, no tract, collect cytology + cultures, clean w/ DUS + post TAO	
					A: granulation tissue (R) side, serous d/c (L) side	
					P: Result of cytology + culture. Clavamoxy	
					ETH head implant	[redacted]
3/8/19 WT: 6.49	MMU [redacted] CAGE TIME 2:10				0.7 MLS KET/ D→ 1310 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR	W.O. 4903 NRL02
3-12-19	6.64				Cytology (3-8-19): Moderate cellularity, large numbers of neutrophils + fewer macrophage, large numbers of extracellular large cocci + rare intracellular large cocci → Neutrophilic infiltrate w/ rare intracellular bacteria (suspect staph)	
					Culture (3-8-19): 4+ Staphylococcus coagulase +, 1+ Pseudomonas (typhae)	
					Evaluate animal when sedated for cleaning, (L) pill box large amount of purulent d/c w/ track from midline + over (L) implant. (R) side - no discharge	
					A: Infected (L) cranial implant w/ purulent pocket/track	[redacted]
					P: Start clindamycin for 14 days	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
					Animal #: [redacted] Room#: Ex 141-5	
2/1/19		G	G	CC	SO: BAR, OPM: Cranial implants. No facial edema, active, MM=Pink, implants: CDI, Margins: WNL. A: Stable implanted animal P: DC from OP, CTM on LTOP & via routine cleanings	[redacted]
①					Animal #: [redacted] Room#: Ex 141-5	
1/25/19		G	G	N	SO: BAR, OP: Cranial implants: implants CTD, Animal active with NEPD, no facial edema Noted.	[redacted]
2/8/19	6.8					[redacted]
2/8/19					Performed cranial implant cleaning. Implant clean and dry	[redacted]
2/22/19	6.9					[redacted]
2/22/19					SO: Rec'd in [redacted] per wo# 4666, NRL ② 2. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery	Shaved area around implants for better visualization. Gave add. 0.5mL Ket IM. [redacted]
2/22/19	MMU [redacted] 0.7 MLS KET/ D->SURGERY				NRL02 W.O. 4663	[redacted]
WT: 6.91	TB TEST LEFT EYE 24HR ✓ 48HR ✓ 72HR ✓ CAGE TIME 2:30 15MIN 2:30MIN 3:45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR					
3-1-19	6.57				0.7cc KET → Room [redacted] W.O. 4760	[redacted]
3/1/19					SO: Rec'd in [redacted] per wo# 4760, NRL ② 2 Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. ~~Performed neuro recordings~~ then returned to homecage for recovery	Area CDI. [redacted]

① L.E. [redacted] 2-5-19 ② NIA [redacted] 2/1/19

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 23

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/18/19		F/G	G	N	SO: BAR OPH. cranial implants	
					implants appear CLO, MMs pk,	
					nails WNL NEED	[redacted]
1/24/19					A: Stable animal w/ cranial implants	
					P: D/C to KTOP + continue routine	[redacted]
⊗ D/C ⊗ Recharge					cleanings per protocol.	
1/25/19	6.8					[redacted]
1/25/19					Cranial Implant CLEANING 0 mls Ketamine 0 mls Dexmedetomidine/Atipamizole reversal or chaired cleaning Implant/post edges cleaned and hair trimmed Novlsan/Betadine was used to clean the implant. Discharge: Y / N Amount of discharge: none Color: normal Additional Treatment: N/A	[redacted]

PHYSICAL EXAM [redacted]

Date 2-1-19 Weight 6.95 BCS 2.0

HR 148 RR 28 TEMP 100.8 ☐ Project Code ☐ Shave Tattoo

1. Integument head implant
2. Oral Cavity agenesis of mandibular incisor
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation WNL

implant is clean, edge well healed, no discharge, shaved + cleaned with DNS

Animal may be unpaired or individually housed while receiving veterinary care [redacted]

2/1/19 MMU [redacted] / 0.7 CC KET/D->1310 W/O4462 NRL02

WT: CAGE TIME 1:55 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___ [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] **California National Primate Research Center** Page # 22

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/11/19	cont				A: stable implant, resolved edema/swelling	
					P: decrease observations to 1x/week	
					increase if becomes indicated.	[redacted]
11/11/19	6.7					
1/11/19 MMU [redacted] 0.7 MLS KET/D→6042 W/O 4148 NRL02						
WT: 6.46						
CAGE TIME: 1.20 15MIN 1 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___						[redacted]
1/11/19					Clipped hair around implant posts.	
					Cleaned w/ novlasan solution. allowed	
					~20mins contact time. no discharge	
					present. A: healthy implant. P: Clean	
					1x wk.	[redacted]
1/14/19					SO: IM tx for this animal ended 1/3	
					Animal is doing well. implant is	
					clean, no d/c R Cranial implant (12/17)	
					P: ✓ Animal next wk + reassess for	
					transfer to LTOF	[redacted]
1/18/19					[redacted]	
					Cranial Implant CLEANING	
					Ø mls Ketamine Ø mls Dexmedetomidine/Atipamizole	
					reversal or chaired cleaning	
					Implant/post edges cleaned and hair trimmed	
					Novlsan/Betadine was used to clean the implant.	
					Discharge: Y / N	
					Amount of discharge: Ø	
					Color: normal	
					Additional Treatment: N/A	[redacted]
1/19/19		G	G	CC	SO: BAR OP post cranial implant, animal is	
					moving well, appears to have normal mentation and	
					ambulation, very mild crusting at the base/skin edge	
					of the R cranial implant, no d/c, no swelling, no	
					attention to implant	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

mmu

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/4/19					SO: Rec'd in [redacted] per wo# 4113 NRL ID 2. Monitored under propofol/ketamine sedation (did/did not intubate). Cleaned implants with chlorhexidine scrub. Performed neuro recordings then returned to homecage for recovery. Gave additional 0.5mL ketamine IM during procedure.	
					SO2: margins of implant and incision CDI.	[redacted]
1/4/19					SO3: Skin margins clean + dry, apposed implant edges. Skin incision healing well. R incised rostral to exposed implant has very subtle edema, approx 1-2mm raised. Not significant enough to observe. Trimmed hair at skin margins to aid visualization	
					A: Healing well post implantation, trace swelling	
					P: see 1/4 P, consider diphenhydramine to reduce cranial swelling recurrence	[redacted]
1/5/19		G	G	N	SO: BAR OPM: cranial implants; cranial implants CDI, noted no erythema or scabbing, margins WNL.	[redacted]
1/6/19		G	G	N	SO: BAR OPM: cranial implants, implants CDI, noted very mild crusting @ posterior aspect of (L) port, NEPD	[redacted]
1/8/19		G	G	N	SO: BAR, OP: Cranial implant; implants appear intact + stable, mild crusting around implant, dry, no swelling, no facial edema A: Improved swelling, stable implant P: decrease observations to 2x/wk per DPM	[redacted]
1/11/19		G	G	N	SO: BAR OPM: cranial implant no facial edema, bruising or erythema. Implant CDI, no signs of discharge.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
1/2/19					(cont) or implant pulling. No clin signs noted. Pads appear pretty clean possibly d/t crusting of (R) par. A: Ileo post op doing well P: Extend diazepam & bedding another day until animal completes 1st recovery & assess if implant can be evaluated to determine LTP	
					/	[redacted]
1/3/19		G	G	N	SO: BAR OPM: cranial implants, incision CDI w/ mild resolving scabbing. No exudate viewed @ either implant, no swelling or erythema. NEPD.	[redacted]
1/4/19					A: Recovering well, tx ended 1/3 P: Continue daily VS ✓ thru 1/7, monitor for recurrence of facial edema and scratching, assess to decrease monitoring frequency if animal remains stable	[redacted]
1/4/19		G	G	N	SO: BAR OPM: Cranial implant. Cranial implant CDI, margins WNL. NEPD.	[redacted]
1.4.19	665				IOM / wt / ID → Surgery. 0.7 KK	[redacted]
					ANIMAL MONITORED UNTIL RECOVERED	

MMU [redacted] F
7yrs 9mos 6.81kg NRL02

Diazepam 5 mg/mL
0.50 mg/kg Dose — 3.4 mg Total Dose
0.70 mLs Volume — [redacted] — PO Rte, BID Freq, 5 Days
Start 12-30-2018 End 01-03-2019
Extended
Extended

[redacted] C-116001 Upd02JAN314:15 Prn02JAN314:15

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diphenhydramine 25 mg/caps
3.00 mg/kg Dose — 19 mg Total Dose
0.80 caps Volume — PO Rte, BID Freq, 13 Days
Start 12-22-2018 End 01-03-2019
Modified Extended
Modified, Extended

[redacted] C-115763 Upd02JAN314:15 Prn02JAN314:15

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/29/18		G	G	N	SO: BAR OPM: cranial implant Animal	
					active in cage and accepting treats.	
					Did Not shiver or pull @ implant	
					during observation. Cranial Implant	
					margins are CDI, No swelling or	
					erythema Noted. No swelling observed	
					around eyes or face. A: Cranial implant	
					stable, angioedema resolved. P: CTM	
					on OPM Daily, cont tx as planned	[redacted]
12/30/18		G	G	N	SO: BAR OPM Cranial Implant Implant	
					Margins CDI. Animal Moving well	
					around cage, accepting treats	
					A: Cranial implant stable	
					P: vet assess Daily, cont tx as	
					planed	[redacted]
12/31/18		G	G	N	SO: BAR OPM: Cranial Implant	
					Moving around cage well. Accepting	
					treats. Margins around implant are	
					CDI. A: Cranial implant stable.	
					P: vet assess daily cont tx as planned	[redacted]
1/1/19		G	G	N	SO: BAR OPM: Cranial implant very active	
					in cage No shivering or head pulling	
					behavior Noted. Cranial Margins CDI,	
					No swelling, D/C or erythema. A: Animal	
					Stable post implant sx. P: CTM on OPM	
					Daily, cont tx as planned.	[redacted]
1/2/19		G	G	N	SO: BAR OPM Cran implant	
					Animal appears calm - no scratching	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 18

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/27/18		F	G	N	SO: BAR QPM: Cranial implants. Implant	
					CDT no d/c or crusting at margins	
					No facial edema. Very interactive	
					w/treats. No scratching. NEPO.	[redacted]
					A: Stable animal post cranial implant	
					Facial angioedema resolved	
					P: Cont tx as planned, cont to	
					monitor on QPM Daily (vet assess)	[redacted]
12/27/18		G	G	N	SO: BAR 2-3 chow eaten? And	
					animal reported to have consumed	
					~200 mls of [illegible] (on 12/27) Good	
					activity. No shiver/shuttering	
					response (though fairly certain	
					it is this animal's stress response	
					to some personnel coming into the	
					room or close to her) Noted	
					occasional wipe around pen - no	
					scratching or massage obs.	
					Possible slight edema around	
					eyes & muzzle A: Resolving/resolved	
					angioedema - on benadryl	
					② Calm response & attitude	
					- improved on valium & afe	
					more to have room P: Finish	
					Ketoprofen tx today, Extend benadryl	
					to 1/2, ↓ valium to 1/2 dose on 12/30	
					~~to 1/2 dose~~ ① until 1/2	
					Check animal daily, stop drugs	
					on 1/2 or even 1/3	

MMU [redacted] F
7yrs 9mos 6.48kg NRL02
Diphenhydramine 25 mg/caps
3.00 mg/kg Dose — 19 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 12 Days
Start 12-22-2018 End 01-02-2019
Modified Extended
Modified, Extended

KLC C-115763 Upd28DEC316:45 Prn28DEC316:45

MMU [redacted] F
7yrs 9mos 6.01kg NRL02
Diazepam 5 mg/mL
0.50 mg/kg Dose — 3.4 mg Total Dose
0.70 mLs Volume — PO Rte — BID Freq — 4 Days
Start 12-30-2018 End 01-02-2019

[redacted] C-116001 Ins28DEC316:46 Prn28DEC316:46

① PE [redacted] 12/28/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

[redacted]

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 17

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
12/26/18					Cont: benadryl (12/25) until facial edema is entirely resolved, Reduce/wean off valium when able (12/27) Give 1 course of ketoprofen (3 days → 12/28) to potentially reduce/address sinus inflam	[redacted]
					[redacted]	
					Admit ☒ Prob. Sheet ☒	
12/26/18					moved → [redacted]	[redacted]
12/27/18		G	G	N	SO: BAR Good intake of stool out. Increased activity, healing well by 1st int. Cont. v. mild facial swelling. Animal tech noted slight shiver but only as doors open & new personnel walk in room - thought to be a stress response. Animal obs. wiping around ports repeatedly until very calm - then stops (smells & licks hand afterward) NRL staff re animal takes hand & almost massages head rostral & caudal to ports. A: Animal is currently stable on benadryl for angioedema w/ is resolving (almost resolved), valium for stress (improved more home - but still occ shiver & fur out of wiping around ports, scratching?, massaging head? ③ Finish keto for potential inflam. Vet assess daily	

MMU [redacted] F
7yrs 9mos 6.81kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 34 mg Total Dose
0.34 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-26-2018 End 12-28-2018

KLC C-115852 Ins26DEC812:01 Prn26DEC812:01

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diazepam 5 mg/tablet
1.00 mg/kg Dose — 6.5 mg Total Dose
1.30 tabs Volume — PO Rte — BID Freq — 9 Days
Start 12-21-2018 End 12-29-2018
Modified Extended
Modified, Dose Ovrd, Extended

[redacted] C-115751-DO Upd27DEC809:46 Prn27DEC809:46

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diphenhydramine 25 mg/caps
3.00 mg/kg Dose — 19 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 8 Days
Start 12-22-2018 End 12-29-2018
Modified Extended
Modified, Extended

KLC C-115763 Upd27DEC809:46 Prn27DEC809:46

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 16

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/25/18		G	G	N	SO: BAR. implants & incision CDI. Normal movement. Scratching at nasion and implants while being observed. Face still swollen, (R) cheek appears mildly more swollen than on 12/24. Both eyes still have edema and are half open. Appears alert and active.	[redacted]
12/26/18		G	G	N	SO: BAR. implants CDI, shivering. No facial swelling visualized. BAR. Normal movement.	[redacted]
12/26/18		G	G	N	SO: BAR Incision CDI Mucosa imperceptible	
		1/2	G	N	facial swelling, possible shivering elected to make heat lamp closer	
					Good appetite for all supps & 1 chew	
					lots of stool AM Incision healing well	
					by 1st int (Head implants are	
					clean) ② Resolving angioedema	
					③ all shivering. P: stop valium	
					after today to assess off valium	
					tomorrow. Cont bleeding 12/27 +/- 12/28	
					Cont to monitor closely - incl	
					for shivering. Eval to send	
					animal to home cage. If animal	
					starts gaping after her head implant	
					off valium again tomorrow.	
					Consider sedating for RS rads	
					(incl CBC & Chem 20) +/- neurorecord	[redacted]
					P2: Surgeon had a concern regarding	
					a screw in or near a muscle	
					causing potential irritation	[redacted]

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diphenhydramine 25 mg/caps
3.00 mg/kg Dose — 19 mg Total Dose

0.80 caps Volume — PO Rte — BID Freq — 7 Days
Start 12-22-2018 End 12-28-2018

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 15

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/24/18		G	G	N	S0: BAR. Face and back of head swollen.	
					(R) eye swollen halfway shut. Animal	
					consistently scratching implants and	
					picking. Implants CDI. Animal observed	
					shaking. Per DVM, admin. 0.40ml	
					of Diphenhydramine IM instead of PO.	
	6.81				S02: Sedated w/ 0.6ml of Ket + 0.1ml of	
					Dexmed 7Atip IM. Prior to sedation, performed	
					arm pull to submit NOVA.	
					Due to	
					electrolyte	
					imbalance,	
					elected to sedate after consulting	
					Senior vet. Retook NOVA while	
					sedated + values trended	
					towards	
					normal.	
					Administered	
					100ml of LRS SQ, placed	
					TAO in (R) eye due to prior concerns when	
					eye open in SX, + placed cold pack on	
					face until waking up from sedation.	
					cleaned incision + implants w/ DNS. Slight	
					Serosanguineous d/c emitted from (R) implant.	
					A: Edematous face 2° to suspect anaphylaxis	
					of unknown etiology. Incision post cranial-	
					implant sx healing by 1+2 int. P: cont.	
					Rx, monitor for ↓ swelling. CTM on HB MH.	[redacted]

PHYSICAL EXAM

Date 12/24/18 Weight 6.81 Kg BCS 2.00

HR 120 RR 28 TEMP 99.8 ☐ Project Code ☐ Shave Tattoo

1. Integument Incision CDI, mild erythema surrounding implants
2. Oral Cavity Slightly edematous tongue, cheeks
3. Eyes Periorbital edema. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation Not performed

NOVA results: Prior to sedation
pH: 7.1 Hct: 41%
HCO3: 35.4 Na: 156.3 K: 5.98
Glu: 79 BUN: 21
Creat: 1.0

NOVA results:
pH: 7.4 Hct: 35%
HCO3: 32.7 Na: 141.2 K: 3.67
Glu: 78 BUN: 17
Creat: 0.9

Samples Collected
Date: 12/24/18
R/C SS (CBC) (Chem20)
Vol. blood 0.4ml
Other: NOVA

receiving veterinary care

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
12/21/18					SO: Obs animal rubbing & pulling on implant repeatedly so elected to restrain her on diazepam for 2 d. P: See previous plan & monitor for response – only improvement in pulling & rubbing implant	[redacted]
12/22/18		F	G	N	SO: BAR, cranial implant appears CDI + incision. Active & moving well. Started rubbing + scratching @ implant after administration of injections. Stopped when I left/exited room.	[redacted]
		F	G	N	SOZ: BAR. Incision CDI w/ granulation tissue formation on rostral portion of incision. Cageside, aggressively picking rostral portion of incision + excoriations on face + (L) shoulder + neck. Readily ate banana offered. A: cranial implant recovery w/ incision healing by 1° + 2° int. P: Start Rx to ↓ picking / scratching behavior. CM on POM.	[redacted]
12/23/18		G	G	N	SOVBAR, ate F+VF lowl water, Sta CDI, lying back R side, normal mvt, attentive to surroundings. SOZ: BAR. Visualized scratching caudal portion of incision. Elected to increase Diphenhydramine dose. A: Stable post cranial implant procedure. Incision healing by 1° + 2° int. P: See 12/22 entry	[redacted]

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diazepam 5 mg/tablet
0.60 mg/kg Dose — 3.2 mg Total Dose
0.60 tabs Volume — PO Rte — BID Freq — 2 Days
Start 12-21-2018 End 12-22-2018

[redacted] C-115751 Ins21DEC'16:29 Prn21DEC'16:29

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diphenhydramine 25 mg/caps
3.00 mg/kg Dose — 19 mg Total Dose
0.80 caps Volume — PO Rte — BID Freq — 4 Days
Start 12-22-2018 End 12-25-2018

Diazepam 5 mg/tablet
1.00 mg/kg Dose — 6.5 mg Total Dose
1.30 tabs Volume — PO Rte — BID Freq — 3 Days
Start 12-21-2018 End 12-23-2018
Modified

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diazepam 5 mg/tablet
1.00 mg/kg Dose — 6.5 mg Total Dose
1.30 tabs Volume — PO Rte — BID Freq — 7 Days
Start 12-21-2018 End 12-27-2018
Modified Extended

Dose — Total Dose
0.39 caps Volume — PO Rte — BID Freq — 7 Days
Start 12-22-2018 End 12-28-2018

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/20/18					-mainly FRT & veg (incl kiwi &	
					avacado) & fair out of normal but soft stool	
					under her cage! Drank OK! Incision	
					CDT. Occ still picks, wipes, or pulls	
					@ (R) port w/h/ she has done since	
					sx. A: Fairly good post op recovery	
					w/ incision healing well by 1st int.	
					Concerns of ↑ ICP yesterday (so	
					↑ dexamethasone tx) P: CTM closely	
					on PO, Encourage intake. Finish	
					all tx & supps thru (12/23) d/c w/ATW/Ke	
					SO: Animal is a bit spicier today	
					off vadium & and only very slight	
					erythema on (R) eyelid. No	
					rubbing obs. today	[redacted]
12/20/18		P/F	G	SS	SO: BAR. Very active, standing in cage. Ate supps, not chow. Mild	
					erythema on medial R calf w/ pinpoint lesions. Implants clear/dry/	
					intact. Normal mvmt, mentation. Mucus membranes pink.	[redacted]
12/21/18		P F	G	N	SO: BAR, active in cg. Animal noted to be shivering	
					& scratching; occasionally picking/pulling at	
					implant	[redacted]
12/21/18		F	G	N	SO: BAR Animal obs. shivering. Placed	
					heat lamp closer. Excoriations still	
					ms on (R) inner leg. No d/c noted	
					around the ports. Incision is clear.	
					Animal ate a fair amt of bananas	
					& raisins when offered. A/P see 12/20	
					P: Also trying to get grade between	
					this animal & her roommate for enrichment	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊕	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊗	Observations	Initials
12/19/18					cont: Animal either had light contact of top of head w/ floor or head hovered above floor - not clearly pressing. Animal frequently scratches incision, but no irritation/lacerations. During observations animal shook her head 3 times and lost her balance, twice completely falling. Appears ataxic, concern of intracranial swelling causing central vestibular signs. Consulted w/ project vet & agree to increase dexamethasone to BID tonight & 1 dose for next 2 days.	
					A: Concern of increased intracranial pressure	
					P: Updated vet on call & assessed case together, monitor for changes in condition	[redacted]
12/20/18					SO: On call vet came in & obs animal for ~3 hrs. Animal laid down & appeared to look under cage & try to hold hands w/ roommate, but no headshaking or other signs of depression or potential ICP were noted. Monitored the rest of the night & night shift	[redacted]
12/20/18		F	G	N	30: BAR Animal is sitting calmly on her perch this am - No signs of depression, ↑ICP, or other clinical signs. She ate a fair amt of food	

MMU [redacted] F
7yrs 9mos 6.60kg NRL02

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 6.6 mg Total Dose
0.70 mLs Volume — IM Rte — BID Freq — 2 Days
Start 12-18-2018 End 12-19-2018
Modified

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5. mg Total Dose
0.50 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-20-2018 End 12-21-2018
Modified

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 6.6 mg Total Dose
0.70 mLs Volume — IM Rte — BID Freq — 2 Days
Start 12-20-2018 End 12-21-2018
Modified

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/9/18		F	G	N	SO: POAR Animal ate ~ 1/2 her	
					fruit & veg (avocado, green beans, grapes, apples,	
					prunes) along w/ RC and others.	
					(P) eye is mild/mod erythematous	
					periorbitally. Incision CDT.	
					Animal is a bit calmer this am	
					though still pulling on her (P)	
					port/connector, but mostly	
					grooming & holding hands w/	
					roommate through the cage.	
					A: Good post op recover improved	
					intake & stool, calmer today	
					on valium, not itching → grooming	
					instead, mild/mod periocular	
					erythema OD, Incision healing	
					by 1st int P: (on) to more closely	
					on PO Encourage intake	
					Ens: all tx & supps as planned	
					Try to apply ophthalmic TAO	
					cage side (No sedation) as	
					possible	[redacted]
12/9/18					SO2: PM: Animal reported laying down. At observation	
					attitude, activity, mentation all appear normal. Occasionally	
					observe animal laying down at the front of the cage to	
					hold hands with / groom visual buddy. Apparently stable post op.	m
12/9/18					5pm: Animal reported for possible head	
					pressing. Observed animal position w/ head	[redacted]
					down on floor multiple times in 10 min	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/18/18		F	G	N	SO: BAR Animal has a fair cut of very dry scab. She ate PE, 1/2 banana fruit & veg yesterday. Drank ~250 mls H2O. Not eating as much this am. However animal has excessive itching despite bendadryl tx. Noted mild bloody/clear d/c @ pors. Head incision CDT. Occ pickiness or even pulling at (R) pors & possibly mildly swollen. A: Good postop recovery. Incision healing by 1st int. P: Wound closed on postop. Switch hydromorphone to buprenex tx. Encourage intake [redacted] SO2: Animal took 2 inulin dots. SO3: 3pm Animal was reported for pulling @ skin. Noted (R) inner leg had mild erythema & a few scratch marks, a few scratch marks also noted on neck & arms. Scratching has diminished but not resolved. Animal does not appear painful or stressed. Probably still itchy from opioids. Noted some grooming like activity. Animal is somewhat reactionary at times. Ate grapes, greenbeans & drank water. ↑ food production (more). A: Stable but maybe agitated. P: Elected to start diazepam for 2d & monitor response. [redacted]
2/18/18						
2/19/18						

MMU [redacted] F
7yrs 8mos 6.70kg NRL02

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1. mg Total Dose
0.10 mLs Volume — IM Rte — TID Freq — 2 Days
Start 12-17-2018 End 12-18-2018

MMU [redacted] F
7yrs 8mos 6.70kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .20 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 2 Days
Start [redacted] End 12-18-2018

MMU [redacted] F
7yrs 8mos 6.70kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .20 mg Total Dose
0.70 mLs Volume — IM Rte — TID Freq — 2 Days
Start 12-18-2018 End 12-19-2018

MMU [redacted] F
7yrs 9mos 6.48kg NRL02

Diazepam 10 mg/tablet
0.50 mg/kg Dose — 3.2 mg Total Dose
0.32 tabs Volume — PO Rte — BID Freq — 2 Days
Start 12-18-2018 End 12-19-2018

KLC C-115600 Ins18DEC2016:51 Prn18DEC2016:51

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted]

California National Primate Research Center

Page # 9

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
12/17/18	(cont)					

MMU [redacted] F
7yrs 8mos 6.60kg NRL02

Famotidine 10 mg/mL
0.50 mg/kg Dose — 3.3 mg Total Dose
0.33 mLs Volume — IM Rte — SID Freq — 7 Days
Start 12-16-2018 End 12-22-2018
have dose ready 12/17AM for p/u by sx tech

Maropitant 10 mg/mL
1.00 mg/kg Dose — 6.7 mg Total Dose
0.70 mLs Volume — SC Rte — SID Freq — 7 Days
Start 12-17-2018 End 12-23-2018
12/17 dose given by sx

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 6.6 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-16-2018 End 12-17-2018
Dose Ovrd | Have dose ready 12/17AM for p/u by sx tech

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5. mg Total Dose
0.50 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-18-2018 End 12-19-2018

Dexamethasone 10 mg/mL
0.50 mg/kg Dose — 3.3 mg Total Dose
0.33 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-20-2018 End 12-21-2018

Dexamethasone 10 mg/mL
0.25 mg/kg Dose — 1.7 mg Total Dose
0.17 mLs Volume — IM Rte — SID Freq — 1 Days
Start 12-22-2018 End 12-22-2018

MMU [redacted] F
7yrs 8mos 6.70kg NRL02

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1. mg Total Dose
0.10 mLs Volume — IM Rte — TID Freq — 3 Days
Start 12-17-2018 End 12-19-2018
check with sx for time of first dose 12/17

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .20 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-17-2018 End 12-19-2018
give as PM dose only

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 3 Days
Start 12-17-2018 End 12-19-2018

Boost
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 4 Days
Start 12-17-2018 End 12-20-2018
BOOST SOAKED CHOW PLEASE

Prunes
Dose — Total Dose
Volume — PO Rte — SID Freq — 4 Days
Start 12-17-2018 End 12-20-2018

Diphenhydramine 50 mg/mL
3.00 mg/kg Dose — 20 mg Total Dose
0.40 mLs Volume — IM Rte — BID Freq — 3 Days
Start 12-17-2018 End 12-19-2018

MMU [redacted] F
7yrs 8mos 6.70kg NRL02

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 168 mg Total Dose
0.50 mLs Volume — IM Rte — BID Freq — 7 Days
Start 12-17-2018 End 12-23-2018

Levetiracetam 100 mg/mL
14.00 mg/kg Dose — 92 mg Total Dose
0.90 mLs Volume — PO Rte — BID Freq — 1 Days
Start 12-16-2018 End 12-16-2018

Levetiracetam 100 mg/mL
20.00 mg/kg Dose — 132 mg Total Dose
1.30 mLs Volume — PO Rte — BID Freq — 4 Days
Start 12-17-2018 End 12-20-2018

Modified
Dose Ovrd, Modified | have dose ready 12/17AM for p/u by sx tech
Dose — Total Dose
Volume — PO Rte — SID Freq — 7 Days
Start 12-17-2018 End 12-23-2018

Water
1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte — SID Freq — 7 Days
Start 12-17-2018 End 12-23-2018

Rice Cereal
Dose — Total Dose
Volume — PO Rte — BID Freq — 6 Days
Start 12-17-2018 End 12-22-2018

Levetiracetam 100 mg/mL
10.00 mg/kg Dose — 67 mg Total Dose
0.70 mLs Volume — PO Rte — BID Freq — 1 Days
Start 12-21-2018 End 12-21-2018

12/17/18					SO: PES 2.0	[redacted]
					SO2: CBC WBC 6.5, RBC 5.2, HCT 38.6, MCV 70,	
					Platelets 232, P.P. 7.6, Fibrinogen 200	
					A2: CBC WNL	
					P2: CTM on POM	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/2/18	6.5					[redacted]
11-9-18		G	G	cc	SO Bar (P) RC: face trauma: Animal has a red	
					scratch abrasion mark ≈ 2cm x .3 cm on (R)	
					side of nose/cheek just below (R) eye.	
					no blood or break in skin noted. Animal	
					is Active w/NEPO. No tx needed.	
					A: minor scratch abrasion	
					P: CTM on MH.	[redacted]
11/16/18	6.5					[redacted]
11/30/18	6.6					[redacted]
12/13/18					Box/D → Transport van, return w/o 3872 NRL02	[redacted]
12/13/18						
					SO: Transported to [redacted] or MRI, project NRL02	
					WO# 3872. Sedated with ketamine 0.7 mls,	
					Animal was / was not placed in Stereotax,	
					performed MRI per protocol, recovered fully,	
					returned to CNPRC home cage	
					Animal did/did not receive Ketoprofen or	
					Buprenex IM	
						[redacted]
12/14/18	6.70					[redacted]
12/17/18					MMU [redacted] 0.7 CC KET/ D→SURGERY W/O 3899 NRL02	[redacted]
WT: 6.48						
CAGE TIME		15MIN	30MIN	45MIN	1HR 1.25HR 1.5HR 1.75HR 2HR	
12/17/18					SO: Rec'd in [redacted] prep wo# 3899, project NRL02	
					Surgically prepped, performed cranial implants	
					See anesthesia log & surgery report. Recovered,	
					returned to home cage. Monitored until fully alert.	
					A: cranial implants	
					P: POM X 7 days, Start RX	
					✓ Charges ✓ Admit ✓ RX ✓ Supps ✓ Move Sheet	
					✓ Surgery Log ✓ Anesthesia Log ✓ Surgery Report	[redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
9/7/18		G	G	N	SO: BAR (P), DPM: Blood unknown. Animal	
					mensing, very small amount blood	
					in cage. No trauma. NEPD.	
					A: Mensing - stable at this time	
					P: CTM on MH	[redacted]
9/21/18	6.7					[redacted]
10/4/18	6.89					[redacted]
10/6/18					SO: BAR (P). MMU [redacted] + MMU [redacted]	
					escaped enclosure. No trauma visualized to	
					digits, limbs, body, or face. A: NEPD	[redacted]
					P: CTM on routine MH.	
10/7/18		F	G	CC	SO: per husbandry, animal is anxious post	
					escape 10/6, unwilling to move into smaller	
					cage for feeding, has not eaten chow and	
					is declining treats; project behaviorist contacted	
					SO2: afternoon feeding animal ate 2 chow and	
					copious produce. A: variable intake post escape	
					P: CTM on routine MH	[redacted]
10/8/18		F	G	N	SO: BAR, RE: Poor App (1 chow). ↓ chow	
					in cage, ate scratch and treats.	
					active, NEPD. Receives treats per project.	
					A: Fair - Good appetite	
					P: CTM on MH	[redacted]
10/19/18	6.5					[redacted]
10-31-18		G	G	CC	SO: BAR RE: Face trauma: Three minor scratches	
					on (L) cheek. No breaks in skin, NEPD.	
					No tx needed. A: minor scratch abrasions.	
					P: CTM on M.H.	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 6

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
6/27/18		G	G	N	S: BAR, Rel: (D) leg trauma. ~5mm in	
					diameter pinpoint lesion on the	
					medial aspect of the (D) leg. C/D w/mild	
					erythema. No picking during observation	
					NEPD.	
					A: Minor lesion (D) leg	
					P: No tx at this time, CTM or	
					MH	[redacted]
6/29/18	6.2					[redacted]
7/13/18	6.4					[redacted]
7/27/18	6.4					[redacted]
7/31/18					CT SCAN NRLLOC ☒	[redacted]
7/ 31/18 MMU [redacted] 0.42 MLS TELAZOL IM W.O._____						
WT: CAGE TIME 9:00 15MIN 1 30MIN 1 45MIN 1 1HR 1 1.25HR 2 1.5HR 2 1.75HR 3 2HR___						✓
~~6/10/18~~	6.4					
8/10/18	Cardiologist-guided echocardiogram performed due to:					
	pre-shipment / pre-project / clinical					
	Preliminary Results: Normal / LVH / Suspect (await final results)					
	Comments: Final Echo Result: **LVH Negative**					[redacted]
8/10/18 MMU [redacted] 0.8 MLS KET IM, D→ 1302 SPF01 W.O. 2437						[redacted]
WT: 6.35 CAGE TIME 1:45 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___						
8/24/18	6.40					[redacted]
9/7/18	6.3					[redacted]

CEE 8/10/18 KMM

Obs Form 12.16.2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 5

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations		Initials
3/31/18					SO: BAR (P) Re: Poor Appetite, Ate 1 chow, did/did not eat forage, did/did not eat fruit pieces/treats. A: Poor, fair, good appetite. P:Confirmed / Unconfirmed ____ report.		[redacted]
4/6/18	MMU [redacted] 0.9 ML KET IM, BLED SB , ROOM ROUND UP TB TEST L EYE 24HR / 48HR / 72HR / WT: 6.43 CAGE TIME: 8:25 15MIN 1 30MIN 2 45MIN 3 1HR ___ 75MIN ___ 1.5HR ___ 1.75MIN ___ 2HR ___						[redacted]
4/7/18		P	G	CC	SO: BAR , Re: Poor appetite. Ate 0 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1ST recent confirmed report. P: CTM on MH / OP	Suspect PA/ decreased app. may be due to procedure on ~~4/16~~ 4/6/18.	
4/20/18	6.62						[redacted]
5/4/18	6.50						[redacted]
5/18/18	6.48						[redacted]
6/6/18					moved to [redacted] per move 18-330		[redacted]
6/8/18		F	G	N	SO: BAR (P) Re: Poor appetite. Ate 1 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. ____ recent confirmed report. P: CTM on MH / OP	Per lab staff MMU ate all produce & treats offered during task training.	[redacted]
6/9/18		F	G	N	SO: BAR (P) Re: Poor appetite. Ate 0 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. ____ recent confirmed report. P: CTM on MH / OP	MMU readily eats fresh fruit. A2: Fair app. for supps, Poor appetite for chow.	[redacted]
6/13/18		F	G	N	SO: BAR (P) Noted MMU coughing + sneezing w/ mild erythema around naves & philtrum. A: Coughing & Sneezing. P: Follow up 6/14/18 w/ AM conf. to assess +/- tx.		[redacted]

① E.E. wrote incorrect number/date. 4/7/18 [redacted].

Obs Form 12-16-2011 G = Good. F = Fair. P= Poor. N= Normal. SS= Semi Solid. L=Liquid. B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 4

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1-19-18					moved → [redacted] → 2	[redacted]
①1/6/18	6.70				DE WT	[redacted]
					MMU [redacted] F 6yrs 10mos 6.16kg NRL02 Long Term Bars 2.00 bar/animal Dose — 2.00 Bar Total Dose 2.00 Bar Volume — PO Rte — SID Freq — 138 Days Start 09-28-2017 End 02-12-2018 Ended VLF S-095066 Upd12FEB014:45 Prn12FEB014:45	Supp ended per DVM - Animal not eating.
2/14/18					moved → [redacted] per MO # 18-100	[redacted]
3/2/18		F	G	CC	SO: BAR, Pe: Poor App (0 chow) Animal has to chow, ate scratch, clean cage no stool. Active. NEPD. A: fair Appetite 1st recent report P: CTM on MH	[redacted]
3/6/18		P	G	CC	SO: BAR (P) Pe: poor app (0) No chow in cage post cage cleaning. Animal eagerly ate ½ a banana. Active, NEPD, 2nd recent poor app report, though urgent formed on 3/2/18. Stable. P: CTM on MH. spoke: Animal not fed in am yet.	[redacted]
3/9/18	6.34					[redacted]
3/11/18		2	G	CC	SO: BAR, (P), Pe: Poor App (0 chow) No chow in cage. Cannot confirm poor app. Ate all forage. A: unable to confirm clean cage P: CTM on MH	[redacted]
3/23/18	6.60					[redacted]

① Date should READ 2-6-18 - [redacted] 2-6-18

Obs Form 12-16-2011 G = Good, F = Fair, P = Poor, N = Normal, SS = Semi Solid, L = Liquid, B = Bloody

23-01594_000401

UCD 0364

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 12/9/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL03

Negative TB Test Date: 12/9/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: 16.04 Temp: 99.0 HR: 110 RR: 30 BCS: 4.0 Gender M/F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: vasectomy (2016); Diarrhea x1 - resolved (2019); lethargy x1 resolved (2019); Minor traumas - Resolved

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - NR, Chem - NR

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project Comments:

____ Approved for project pending lab review

X Approved for shipment

____ Stable weanling

____ Other

Examining Veterinarian [redacted] Date: 12/11/20

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

3544

☐ VIRAL PRECAUTION

BZ59, NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMN [redacted]
ANIMAL

12, 9, 20
DATE OF SAMPLE

M 7 YR 8 MO 16.2 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
pre-shipment

HOSPITALIZED NO ☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☒ SL ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	147	mM/L	15		CPK (S,HP)	755	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	151	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	95	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	653	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	19		19		CHOLESTEROL (S,HP)	126	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.0	mg/dl	20		TRIGLYCERIDE (S,HP)	168	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.5	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	21	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.0	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	68	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.8	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.6	g/dl										
13		ALT (S,HP)	91	U/L										
14		AST (S,HP)	40	U/L										

REPORTED BY [redacted] DATE: 12/10/20

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5739

☐ VIRAL PRECAUTION

BZ59, NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

12 , 9 , 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 7 YR 8 MO 16.2 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

pre-shipment

HOSPITALIZED ☐NO ☐YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.8	X 10 ^3/ µl
RBC	5.00	X 10 ^6/ µl
HEMOGLOBIN	12.3	gm/dl
HEMATOCRIT	37.5	%
MCV	75	fl
MCH	24.6	pg
MCHC	32.7	pg/fl
PLATELETS	2.46	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.1 gm/dl

PLASMA COLOR:
- ☐ NO ABNORMALITIES
- ☑ HEMOLYZED 51
- ☐ ICTERIC
- ☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.8 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	43	2494
LYMPHOCYTES	52	3016
MONOCYTES	4	232
EOSINOPHILS	1	58
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
- ☑ ADEQUATE
- ☐ DECREASED ☐+1 ☐+2 ☐+3
- ☐ INCREASED ☐+1 ☐+2 ☐+3
- ☐ LARGE PLATELETS
- ☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
- ☑ ESSENTIALLY NORMAL
- ☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 12/9/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

5010

☐ VIRAL PRECAUTION

PZ59 / NRL03
I.D. / PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

[redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR / REQUESTOR

HEMATOLOGY

10 / 20 / 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM / CAGE

M / 7 YR 6 MO / 16.32 KG
SEX / AGE / WEIGHT

PROCEDURE IS: DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☒ NO ☐ YES ____ - ____ ROOM / CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	7.9	X 10 ^3/ µl
RBC	5.56	X 10 ^6/ µl
HEMOGLOBIN	13.3	gm/dl
HEMATOCRIT	41.3	%
MCV	74	fl
MCH	23.9	pg
MCHC	32.2	pg/fl
PLATELETS	2.03	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.4 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☒ SMEAR EVALUATION TOTAL WBC 7.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	55	4345
LYMPHOCYTES	39	3081
MONOCYTES	3	237
EOSINOPHILS	3	237
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: ____ REPORT DATE: ____

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

3004

☐ VIRAL PRECAUTION

BZ59 , NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

[redacted]
ANIMAL I.D.

10 , 20 , 20
DATE OF SAMPLE

M 1 YR 6 MO 16.32 KG
SEX AGE WEIGHT

PROCEDURE IS: ✓ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO ☒ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☒ S1 ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20, ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	150	mM/L	15		CPK (S,HP)	67	U/L	25		pH		
2		POTASSIUM (S,HP)	3.9	mM/L	16		ALK PHOS (S,HP)	143	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	77	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	26	mM/L	18		LDH (S,HP)	155	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	21		19		CHOLESTEROL (S,HP)	146	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	2.9	mg/dl	20		TRIGLYCERIDE (S,HP)	148	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	20	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.3	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	77	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.5	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.8	g/dl										
13		ALT (S,HP)	88	U/L										
14		AST (S,HP)	28	U/L										

REPORTED BY [redacted] DATE: 10/20/20

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

☐ VIRAL PRECAUTION

I.D. 1251 / PROJECT CODE NR163

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

[redacted] ANIMAL I.D.

INVESTIGATOR [redacted] REQUESTOR

DATE OF SAMPLE

ANIMAL DATA [redacted]

ROOM CAGE

SEX M AGE 1 YR MO WEIGHT KG

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO ☐ X YES ☐ ____ - ____ ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ ° C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☒ ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	150	mM/L	15		CPK (S,HP)	67	U/L	25		pH		
2		POTASSIUM (S,HP)	3.9	mM/L	16		ALK PHOS (S,HP)	143	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	77	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	26	mM/L	18		LDH (S,HP)	155	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	21		19		CHOLESTEROL (S,HP)	146	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	2.9	mg/dl	20		TRIGLYCERIDE (S,HP)	148	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	20	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.3	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	77	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.5	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.8	g/dl										
13		ALT (S,HP)	88	U/L										
14		AST (S,HP)	28	U/L										

REPORTED BY [redacted] DATE: 11/2/20

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5010

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

I.D. 12-1 / PROJECT CODE HRL

ANIMAL I.D. [redacted]

INVESTIGATOR [redacted] REQUESTOR

DATE OF SAMPLE 11 / / /

ANIMAL DATA: [redacted] ROOM CAGE

SEX M AGE 7 YR 6 MO WEIGHT 16 KG

PROCEDURE IS: DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☒ NO ☐ YES ____ - ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS

☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl

CD8= /µl

CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	7.9	X 10 ^3/ µl
RBC	5.56	X 10 ^6/ µl
HEMOGLOBIN	13.3	gm/dl
HEMATOCRIT	41.3	%
MCV	74	fl
MCH	23.9	pg
MCHC	32.2	pg/fl
PLATELETS	2.03	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.4 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☒ SMEAR EVALUATION: TOTAL WBC 7.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	55	4345
LYMPHOCYTES	39	3081
MONOCYTES	3	237
EOSINOPHILS	3	237
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: ____ REPORT DATE: ____

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

PC13 (3/14)

4691

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

B259, NRL03
I.D. PROJECT CODE

MMN [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

9, 30, 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 7 YR 5 MO 16.0 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Re ✓

HOSPITALIZED ☐ NO ☐ YES ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	8.3	X 10^3/ µl
RBC	5.71	X 10^6/ µl
HEMOGLOBIN	13.9	gm/dl
HEMATOCRIT	42.7	%
MCV	75	fl
MCH	24.4	pg
MCHC	32.6	pg/fl
PLATELETS	2.71	X 10^5/ µl

☐ RETICULOCYTES % ____ X 10^5/ µl

☐ PCV (CENTRIFUGED) %

☒ PLASMA PROTEIN 8.6 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☒ FIBRINOGEN 500 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 8.3 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	49	4067
LYMPHOCYTES	47	3901
MONOCYTES	3	249
EOSINOPHILS	1	83
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 10/1/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

2754

BZ59, NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

9/28/20
DATE OF SAMPLE

M 7 YR 5 MO 16.0 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
pre-shipment

HOSPITALIZED NO ☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ✓ HEMOLYZED ☐ ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	148	mM/L	15		CPK (S,HP)	651	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	181	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	112	mM/L	17		GGT (S,HP)	176	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	23	mM/L	18		LDH (S,HP)	287	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	127	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.5	mg/dl	20		TRIGLYCERIDE (S,HP)	79	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.1	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.0	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	66	mg/dl	24	*	hsCRP	25	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.3	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.4	g/dl										
13		ALT (S,HP)	47	U/L										
14		AST (S,HP)	21	U/L										

REPORTED BY [redacted] DATE: 9/29/20

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

*Verified by Repeat [redacted] 9-29-20

CLINICAL BIOCHEMISTRY

1/2014

4582

☐ VIRAL PRECAUTION

B259, NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

9 / 28 / 20
DATE OF SAMPLE

ANIMAL DA[redacted]
ROOM CAGE

M 7 YR 5 MO 16.0 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

pre-shipment

HOSPITALIZED ☐ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	12.8	X 10 ^3/ µl
RBC	4.94	X 10 ^6/ µl
HEMOGLOBIN	12.1	gm/dl
HEMATOCRIT	36.7	%
MCV	74	fl
MCH	24.5	pg
MCHC	33.0	pg/fl
PLATELETS	2.21	X 10 ^5/ µl

☐ RETICULOCYTES % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 7.6 gm/dl

PLASMA COLOR:
☐ NO ABNORMALITIES
☒ HEMOLYZED n
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 400 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 12.8 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	63	8064
LYMPHOCYTES	27	3456
MONOCYTES	8	1024
EOSINOPHILS	2	256
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 9/28/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 9/28/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL03

Negative TB Test Date: 9/28/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: 15.79 Temp: 100.2 HR: 110 RR: 30 BCS: 4.0 Gender: M/F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	mild gingival hyperplasia
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	Grade III/VI systolic (L) side
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 9/28/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Vasectomy - 5/20/16. Various minor/mod general traumas Tx - All Resolved
Non-path diarrhea, treated - Resolved 2/19
Lethargy, indeterminant cause, resolved 8/19

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/28/20 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC: WBC 12.8, HCT 36.7, Fib 400; Chem: CRP 25
Re ✓ CBC: Fib 500; Chem: CRP 13

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

- Approved for project
- Approved for project pending lab review
- ✗ Approved for shipment
- Stable weanling
- ✗ Other

Comments: Acute inflammation resolving. Do follow-up indicated @ this time. Re ✓ CBC/Chem @ next screen out

Examining Veterinarian [redacted] Date: 10/3/20

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

☐ VIRAL PRECAUTION 2779

BZ59, NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

9, 30, 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 7 YR 5 MO 16.0 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Re ✓

HOSPITALIZED NO ☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: _____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	160	mM/L	15		CPK (S,HP)	902	U/L	25		pH		
2		POTASSIUM (S,HP)	5.7	mM/L	16		ALK PHOS (S,HP)	190	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	113	mM/L	17		GGT (S,HP)	156	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	27	mM/L	18		LDH (S,HP)	280	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	26		19		CHOLESTEROL (S,HP)	157	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.6	mg/dl	20		TRIGLYCERIDE (S,HP)	117	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	10.9	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	15	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.2	mg/dl	23		INDIRECT	~~1~~ (1)	mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	90	mg/dl	24	K	hsCRP	13	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	8.5	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.8	g/dl										
13		ALT (S,HP)	61	U/L										
14		AST (S,HP)	30	U/L										

REPORTED BY [redacted] DATE: 9/30/20

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

Verified by Repeat [redacted] 9-30-20

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

1282

6259 / NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

2 / 21 / 20
DATE OF SAMPLE

M 6 YR 10 MO 14 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ☒ COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

r J

HOSPITALIZED ☐NO ☐YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anesthetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

[redacted]
2-21-20

☐ ELECTRONIC CELL COUNT

WBC	4.0	X 10 ^3/ µl
RBC	5.73	X 10 ^6/ µl
HEMOGLOBIN	14.3	gm/dl
HEMATOCRIT	43.2	%
MCV	75	fl
MCH	24.9	pg
MCHC	33.0	pg/fl
PLATELETS	3.23	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ SMEAR EVALUATION. TOTAL WBC 4.0 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	69	2760
LYMPHOCYTES	27	1080
MONOCYTES	4	160
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

[redacted]
2-21-20

☐ PLASMA PROTEIN 7.0 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 2-21-20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

844

☐ VIRAL PRECAUTION

[redacted]

ANIMAL I.D.

B259, NR103

I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

[redacted]

INVESTIGATOR REQUESTOR

2, 21, 20

DATE OF SAMPLE

ANIMAL DAT[redacted]

ROOM CAGE

M 6 YR 10 MO 14 KG

SEX AGE WEIGHT

PROCEDURE IS: ✓ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

new

HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☒ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	148	mM/L	15		CPK (S,HP)	639	U/L	25		pH		
2		POTASSIUM (S,HP)	4.5	mM/L	16		ALK PHOS (S,HP)	102	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	42	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	30	mM/L	18		LDH (S,HP)	390	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	175	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.0	mg/dl	20		TRIGLYCERIDE (S,HP)	69	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	8.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	16	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.0	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	61	mg/dl	24		hsCRP	0	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.4	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.2	g/dl										
13		ALT (S,HP)	38	U/L										
14		AST (S,HP)	30	U/L										

REPORTED BY [redacted] DATE 2/21/20

PERFORMED BY: CNPRC ☐ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

3262

B259 / NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

6 / 26 / 19
DATE OF SAMPLE

M SEX | 6 YR 2 MO AGE | 13.5 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☐ NO ☐ YES ____ - ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	9.1	X 10 ^3/ µl
RBC	5.04	X 10 ^6/ µl
HEMOGLOBIN	11.9	gm/dl
HEMATOCRIT	37.2	%
MCV	74	fl
MCH	23.7	pg
MCHC	32.1	pg/fl
PLATELETS	3.06	X 10 ^5/ µl
☐ RETICULOCYTES	%	X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.4	gm/dl
☐ FIBRINOGEN	200	mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 9.1 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	65	5915
LYMPHOCYTES	31	2821
MONOCYTES	4	364
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

[redacted] 6-26-19

[redacted] 6-26-19

REPORTED BY: [redacted]

REPORT DATE: 6-26-19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

1210

☐ VIRAL PRECAUTION

B259 , NR202
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

6 , 26 , 19
DATE OF SAMPLE

M 6 YR 2 MO 13.5 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	148	mM/L	15		CPK (S,HP)	51	U/L	25		pH		
2		POTASSIUM (S,HP)	4.2	mM/L	16		ALK PHOS (S,HP)	204	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	97	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	28	mM/L	18		LDH (S,HP)	184	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	17		19		CHOLESTEROL (S,HP)	113	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.1	mg/dl	20		TRIGLYCERIDE (S,HP)	100	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	10.0	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	18	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	77	mg/dl	24		hsCRP	2	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.1	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.6	g/dl										
13		ALT (S,HP)	51	U/L										
14		AST (S,HP)	20	U/L										

REPORTED BY [redacted] DATE: 6-26-19

PERFORMED BY: CNPRC ☑ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1080

☐ VIRAL PRECAUTION

BZ59 / NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

mmu [redacted]
ANIMAL I.D.

6 / 13 / 19
DATE OF SAMPLE

m 6 YR 2 MO 13.9 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO X YES ☐ ____ ROOM ____ CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☐ X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX ____ SLOT ____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	141	mM/L	15	*	CPK (S,HP)	5583	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	141	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	104	mM/L	17		GGT (S,HP)	120	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	30	mM/L	18		LDH (S,HP)	811	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	11		19		CHOLESTEROL (S,HP)	99	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.6	mg/dl	20		TRIGLYCERIDE (S,HP)	241	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	8.4	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	19	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.0	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	62	mg/dl	24	*	hsCRP	37	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	5.1	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	2.5	g/dl										
13		ALT (S,HP)	77	U/L										
14	*	AST (S,HP)	114	U/L										

REPORTED BY [redacted] DATE: 6/13/19

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

*Verified by Repeat [redacted] 6-13-19

CLINICAL BIOCHEMISTRY

1/2014

3047

☐ VIRAL PRECAUTION

B259 / NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL ID.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

6 / 13 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

m SEX | 6 YR 2 MO AGE | 13.9 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

PRIOR THERAPY ☐ NO ☐ YES

HOSPITALIZED ☒ NO ☐ YES ____ ROOM ____ CAGE

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	9.2	X 10 ^3/ µl
RBC	4.96	X 10 ^6/ µl
HEMOGLOBIN	11.9	gm/dl
HEMATOCRIT	36.6	%
MCV	74	fl
MCH	23.9	pg
MCHC	32.5	pg/fl
PLATELETS	2.53	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 6.3 gm/dl

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 400 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 9.2 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	58	5336
LYMPHOCYTES	39	3588
MONOCYTES	3	276
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

REPORTED BY: [redacted]

REPORT DATE: 6/13/19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

3005

B259 NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ [redacted] PRECAUTION
ANIMAL I.D.

6 / 11 / 19
DATE OF SAMPLE

M 6 YR 2 MO 14 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ☒ COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

lethargy, inappetence, emesis

HOSPITALIZED ☒ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☒ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	10.3	X 10 ^3/ µl
RBC	5.78	X 10 ^6/ µl
HEMOGLOBIN	14.1	gm/dl
HEMATOCRIT	43.2	%
MCV	75	fl
MCH	24.4	pg
MCHC	32.6	pg/fl
PLATELETS	2.54	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.9 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 400 mg/dl

☐ SMEAR EVALUATION. TOTAL WBC 10.3 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	74	7622
LYMPHOCYTES	19	1957
MONOCYTES	3	309
EOSINOPHILS	4	412
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

6/11/19 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 6/11/19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

1071

B259, NRL.02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

6, 11, 19
DATE OF SAMPLE

M 6 YR 2 MO 14 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: lethargy, inappetence, emesis

HOSPITALIZED NO ☒ YES ☐ ____ ROOM ____ CAGE

PRIOR THERAPY NO ☒ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	416	U/L	25		pH		
2		POTASSIUM (S,HP)	3.8	mM/L	16		ALK PHOS (S,HP)	168	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	110	mM/L	17		GGT (S,HP)	52	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	23	mM/L	18		LDH (S,HP)	255	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	132	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.6	mg/dl	20		TRIGLYCERIDE (S,HP)	49	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.3	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	15	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.0	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	92	mg/dl	24	*	hsCRP	30	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.8	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.6	g/dl										
13		ALT (S,HP)	20	U/L										
14		AST (S,HP)	17	U/L										

REPORTED BY [redacted] DATE: 6/11/19

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

*Verified by Repeat [redacted] 6-11-19

CLINICAL BIOCHEMISTRY

Sample Profile

STP pHox Ultra

Printed: 06/11/2019 01:35:31 PM
Analyzed: 06/11/2019 01:33:24 PM
Analyzer ID: Z118180B0N

Barometer	763.1 mmHg
Sample Type	Venous
Operator:	123456
Releaser:	auto
Patient ID:	[redacted]
Patient Name:	

Other Flags

Comments

Test	Value	Units	Flags
pH	7.471		
pCO2	27.8	mmHg	
pO2	72.5	mmHg	
SO2%	95.7		
Hct	45	%	
Hb	15.0	g/dL	
Na+	144.5	mmol/L	
K+	3.79	mmol/L	
Cl-	110.8	mmol/L	
Ca++	1.14	mmol/L	
Mg++	0.83	mmol/L	
Glu	91	mg/dL	
Lac	1.4	mmol/L	
BUN	13	mg/dL	
Creat	1.4	mg/dL	
TCO2	21.4	mmol/L	
nCa	1.19	mmol/L	
nMg	0.87	mmol/L	
Gap	13.2	mmol/L	
Ca++/Mg++	1.4	mol/mol	
BUN/Creat	9.5	mg/mg	
BE-ecf	-3.3	mmol/L	
BE-b	-1.1	mmol/L	
SBC	23.4	mmol/L	
HCO3-	20.5	mmol/L	
P50	25.9	mmHg	
O2Cap	20.9	mL/dL	
O2Ct	20.2	mL/dL	
A	116.3	mmHg	
Osm	287.6	mOsm/k	

3

☐ VIRAL PRECAUTION

B259 NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

MMW [redacted]
ANIMAL I.D.

1 / 1 / 19
DATE OF SAMPLE

M 5 YR 8 MO 12.48 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☒ DIARRHEA

HOSPITALIZED NO☐ YES☒ [redacted]

PRIOR THERAPY ☒ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) R/C

CULTURES REQUESTED	NEGATIVE RESULT		DIRECT MICROSCOPIC EXAMINATION
	NEGATIVE	NO GROWTH	
☒ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA	✓	✓	
☒ CAMPYLOBACTER	✓		
☒ YERSINIA (CLINICAL)	✓		
☐ AEROBIC			
☐ ANAEROBIC			
☐ FUNGI/YEAST			
☐ LISTERIA			
☐ OTHER			

ORGANISMS IDENTIFIED

1.
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 1/7/19

CLINICAL MICROBIOLOGY

2/2014

4747

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

BZ59 — I.D.
NRLØ2 — PROJECT CODE
[redacted] — INVESTIGATOR / REQUESTOR

MMU [redacted] — ANIMAL I.D.
9 / 28 / 18 — DATE OF SAMPLE

ANIMAL DATA: [redacted] — ROOM / CAGE

M — SEX
5 YR 5 MO — AGE
12.26 KG — WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☐ NO ☐ YES ____ - ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	11.9	X 10 ^3/ µl
RBC	4.87	X 10 ^6/ µl
HEMOGLOBIN	11.9	gm/dl
HEMATOCRIT	35.6	%
MCV	73	fl
MCH	24.5	pg
MCHC	33.5	pg/fl
PLATELETS	3.87	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 8.2 gm/dl

PLASMA COLOR:
☐ NO ABNORMALITIES
X HEMOLYZED MOD
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 11.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	78	9282
LYMPHOCYTES	20	2380
MONOCYTES	2	238
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

[redacted] 9-28-18

[redacted] 9-28-18

REPORTED BY: [redacted]

REPORT DATE: 9-28-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

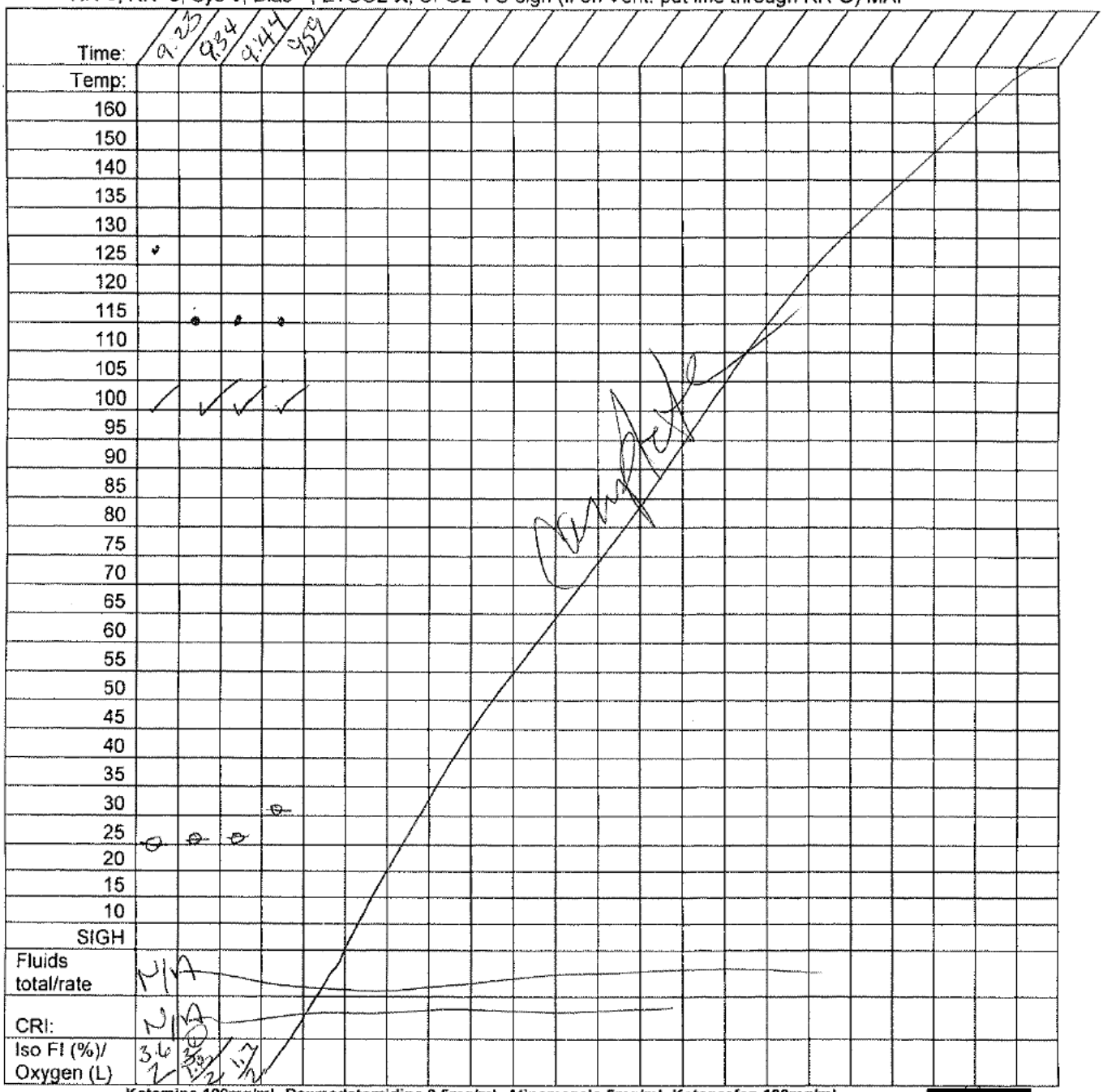
BC13 (8/14)

California National Primate Research Center Anesthesia Monitoring pg. 1 of _____

Animal Species and Number: MMU [redacted] Home Room: [redacted] Date: 8-28-18
Wt (kg): 11.45 Age: 5:3 Sex: M/F Procedure: MRI ET Tube size: 5.5
Investigator: [redacted] W/O# 7614 Project: NR102 IV Catheter Placement: N/A

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	1.3	IM	9:10				
Ketoprofen	0.55	IM	9:11				

Fluid Type N/A **Additives:** N/A Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR-**0**, Sys-**v**, Dias-**^**, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP —



Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

3781

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU[redacted] Location [redacted] Date of exam: 8/3/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 11.29 Temp: 100.4 HR: 90 RR: 50 BCS: 3.0 Gender: M/F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	mild erythema superior eyelid OD
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	clear
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 08/03/18 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Vasectomy 2016, resolved trauma

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 8/3/18 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: WNL

Imaging studies: (to be completed by Veterinary staff)

Date: N/A Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

X Approved for project Comments:

___ Approved for project pending lab review

___ Approved for shipment

___ Stable weanling

___ Other

Examining Veterinarian: [redacted] Date: 08/07/18

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

1654

☐ VIRAL PRECAUTION

B259 , NRLV02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

8 , 3 , 18
DATE OF SAMPLE

M 5 YR 3 MO 11.70 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: Pre. project

HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	145	mM/L	15		CPK (S,HP)	1092	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	254	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	111	mM/L	17		GGT (S,HP)	81	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	23	mM/L	18		LDH (SHP)	261	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	14		19		CHOLESTEROL (S,HP)	120	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.1	mg/dl	20		TRIGLYCERIDE (S,HP)	27	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.5	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	87	mg/dl	24		hsCRP	3	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.7	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.9	g/dl										
13		ALT (S,HP)	50	U/L										
14		AST (S,HP)	30	U/L										

REPORTED BY [redacted] DATE: 8-3-18

PERFORMED BY: CNPRC ☑ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

3978

BZ59, NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU[redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

8 / 3 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M 5 YR 3 MO 11.70 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre · project

HOSPITALIZED ☐ NO ☐ YES ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	6.0	X 10 ^3/ µl
RBC	5.32	X 10 ^6/ µl
HEMOGLOBIN	12.7	gm/dl
HEMATOCRIT	39.1	%
MCV	73	fl
MCH	23.8	pg
MCHC	32.5	pg/fl
PLATELETS	2.01	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.3 gm/dl

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 6.0 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	47	2820
LYMPHOCYTES	49	2940
MONOCYTES	1	60
EOSINOPHILS	2	120
BASOPHILS	1	60
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

[redacted] 8-3-18

[redacted] 8-3-18

REPORTED BY: [redacted]

REPORT DATE: 8-3-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PCTR 147181

Animal ID# [redacted]

California National Primate Research Center

Page # 29

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/10/20	cont				A: Moving well, confirmed vomit suspect 2i	
					to sedation 12/9, Mild periocular erythema	
					2° to TB Test 12/9	
					P: CTM on MH	
					No Tx needed at this time	[redacted]
12/10/20					Animal shipped to Neuralink	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
10/6/20					P Re Vahem in ~2 wks, if cont ↑ CRP	
					present in rounds to determine tx	
					as animal has no clin signs usually	
					or on PE	
① ~~10/16/20~~	~~16.32~~				~~Box~~	[redacted]
10/16/20	16.32				Box weight	[redacted]
10-20-20					**Samples Collected**	
					Date: 10-20-20	
					R/C CBC Chem 20	
					Vol. Blood: 3mL	
					Other:	[redacted]
10/20/20		G	G	N	SO: BAR CBC (10/20) WNL Chem 20 (10/20)	
					WNL A: Resolved inflam marker ↑	
					of unkn etiology. Animal still	
					appears very healthy & comfortable	
					P: CTM via MMT	[redacted]
10/30/20	16.35				Box weight	[redacted]
11/13/20	16.22				Box Weight	[redacted]
12/9/20					__pre-project physical	
					✓ pre-shipment physical	
					__weaning physical	
					See associated P.E. sheet for additional	
					information.	[redacted]
12.9.20	16.04				MMU [redacted] NRL03 W.O 3857	
					1.7 MLS KET IM / D→ 1310 / BLED 3 MLS	
					TB TEST RIGHT EYE 24HR ✓ 48HR ✓ 72HR ✓	
					CAGE TIME: 2.00	
					15 MIN ✓ 30 MIN 3 45 MIN ____ 60MIN ____	[redacted]
					75MIN ____ 1.5HR ____ 90MIN ____ 2HR ____	
12/10/20		F	G	N	SO: BAR Re: Red eye (R), Re: Vomit, Re: weak	
					R eye: mild perocular erythema no swell or drop	
					vs mls vomit in cage. Moving well. Swallow	
					chow just fed. NEPD.	

① EE. Should be blank - [redacted] 10/16/20

Animal ID# [redacted]

California National Primate Research Center

Page # 27

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/28/20	15.79				MMU [redacted] NRL03 WO 2814 1.6 ML KET / BLED 6 MLS / D → 1310 TB TEST (R) EYE – 24HR: — 48HR: — 72HR: — CAGE TIME: 2:35 15MIN 2, 30MIN 3, 45MIN ____ 1HR ____ 1.25HR ____, 1.5HR ____, 1.75HR ____, 2HR ____	[redacted]
9/29/20		G	G	N	SO: BAR RE: Eye red (R), (R) eye has mild-moderate periocular erythema especially on upper lid. Possible very mild swelling of upper lid. Attention paid, NEPD, readily sto treats A: Per DVM grade 2 TB test site reaction P: CTM on MH, CTM TB site as planned	[redacted]
~~9/30/20~~ ①						
9/29/20					SO: CBC ↑ 400, CRP 22, inadvertently gave single dose of Keto 5mg/kg A: Inflammation most likely 2° to Grade II TB rxn P: CTM TB test site daily, Re✓ CBC/chem today.	[redacted]
10/1/20		G	G	N	SO: PAAR NO inflammation or erythema observed OX	[redacted]
9/30/20					SO: APJ Lesion Grade 1	[redacted]
② 9/30/20		G	G	N	SO: BAR OP: R eye inflamation; no significant periocular erythema, mild thickening of R-upper lid, possible small bruise on R eyelid, no decrease in palpebral fissure, no ocular d/c	[redacted]
10/8/20					SO: CBC (9/30) fibrinogen 500, Chem 70 (9/30) CRP 125 A: Some mild acute & chronic inflam of unknown etiology improving	[redacted]

① RG [redacted] 9/29/20 ② LC 10/8/20 [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000431

UCD 0394

Animal ID# [redacted]

California National Primate Research Center

Page # 26

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/27/20					CBC/chem ref show no recurrence of	
					inflammation (CRP: 1, fibrinogen 300) that	
					was associated w/ prior episode of lethargy	[redacted]
					A: stable animal P: CTM on routine exams	
3/6/20	14.2				Box Weight	
5/1/20	15.16				Box Weight	[redacted]
5/28/20		G	G	N	SO: BAR (P) RE: BLOOD UND.; ∅ TRAUMA	
					ON ANIMAL. 1 DROP BLOOD IN CAGE.	
					A: SUSPECT NORMAL MENSE FROM PRIM MATE	
					P: CTM ON MH	[redacted]
6/29/20	15.61				BOX Weight	
6/26/20	15.53				Box weight	
7/24/20	16.30				Box Weight	[redacted]
8/21-20	16.04				[redacted] [redacted] **8/21/2020**	
					___mls Ket. BCS=4 ① Tartar: 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: R L Eye ~~10.81 kg~~ 24hr ___ 48hr___ 72hr___	
					~~8.52 kg~~	
					16.04 kg	
					ANIMAL MONITORED UNTIL RECOVERED	
					① ~~RE 8.52 kg EC 8/21/20~~ mixed in p animals	[redacted]
8/22/20		G	G	cc	SO: BAR, RE: Vomit. Animal sedated	
					yesterday for routine PE	
					A: suspect emesis secondary to sedation	
					P: CTM on MH	
						[redacted]
9/28/20					___pre-project physical	
					2 pre-shipment physical	
					___weaning physical	
					See associated P.E. sheet for additional	
					information.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/20/19	14.17				Box weight	[redacted]
10/4/19	14.34					
10/11/19					RO: Eval this animal & his WT sheet.	
					this animal's ideal WT is 12-13 kg.	
					However, this animal also works for	
					treats 5 d/per. P. Per vet elect to	
					↓ chow to 5/5 in hopes that this animal	
					will lose some weight.	[redacted]
10/18/19	14.48					
11/5/19					MMV [redacted] moved to [redacted] move # 19-780	
11/14/19	14.8					
11/27	14.6					
12/13/19	14.2				Box weight	
12-27-19	14.30					
1-10-20	14.3					
1-23-20	14.2					
2-7-20	14.0					
2-21-20	13.97	[redacted]	[redacted]			
		1.6 mls Ket. BCS=3.0			2/21/2020	
		TB Test: R/L Eye			Tartar: 0 1 2 3 4 Teeth Scaled Y N	
		wt. 13.97			24hr___ 48hr___ 72hr___	[redacted]
					ANIMAL MONITORED UNTIL RECOVERED	

PHYSICAL EXAM

Date 2/21/20 Weight 13.97 BCS 3.0

HR 144 RR 30 TEMP 99.2

☐ Project Code

☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NO

Animal may be unpaired or individually housed while receiving veterinary care [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Atropine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 24

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/14/19		?	G	CC	SO: BAR OP: WT LOSS, NEPD, CHOW PUMED,	
					UNABLE TO ASSESS APP. HUSB. REPORTS ALL	
					CHOW EATEN. READILY ATE TREATS.	
					A: WT LOSS RESOLVED, WT STABLE.	
					P: D/C FROM OP, CTM ON MH	[redacted]
					D/C Snomed O Recharge	
						[redacted]
8/16/19	13.85				mvd to [redacted] #19-559	
8/23/19	14.06					
9-6-19	14.10				[redacted] [redacted] 9/6/2019	
					7 mls Ket. BCS= 3.5 Tartar 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: R 1 Eye 24hr — 48hr — 72hr —	
					Bld 2 mls	
					ANIMAL MONITORED UNTIL RECOVERED	[redacted]
9/7/19		G	G	N	SO: BAR P RE: R EYE RED; VERY MILD	
					ENYTHEMA UPPER LID OF R EYE. Ø SWELLING	
					OR OCULAR D/C. NOT ATTENTIVE TO AREA.	
					A: MILD R EYE ENYTHEMA, SUSPECT GRADE 1	
					TB REACTION, MINOR IRRITATION	
					P: CTM ON MH, NO TX INDICATED @ THIS	
					TIME. CONSIDER FURTHER DX IF WORSENING.	[redacted]
9/12/19		?	G	CC	SO: BAR P RE: POOR APP; NO CHOW IN CAGE.	
					READILY ATE TREATS, NEPD.	
					A: 1ST RECENT REPORT FOR POOR APP	
					P: CTM ON MH	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/17/19					A: lethargy resolved, last weight showed gain. CBC & Chem from 6/26 showed	
					resolution of inflammation & liver enzymes	
					P: ✓ ATTS 1x/wk & monitor wt	
					via if appetite remains good &	
					wt stable to increasing assess to	
					D/C in a few weeks	[redacted]
7/22/19		?	G	N	SO: BAR (P) OPM: wt loss; actively eating chow, NEPD.	
					A/P: see above.	[redacted]
7/26/19	14.18					[redacted]
7/26/19					A: Poor appetite resolved	
					P: Monitor wt off supps, if wt	
					remains stable or ↑, assess to reintroduce	
					food scheduling if needed for project	[redacted]
7/29/19		G	G	N	SO: BAR (P) OPM: wt loss; No chow remaining b/t cages	
					active MMU.	
					A/P: see 7/26.	[redacted]
7/30/19					A: Consulted w/ project staff & agreed to	
					restart food scheduling for project	
					P: ✓ ATTS 1x/wk & obtain weekly wts	
8-2-19	14.23				by WT	
8/5/19		G	G	CC	SO: BAR (P) OPM: wt. loss; ate all chow 8/4 per food log.	
					active b/t cages.	
					A/P: see 7/30.	[redacted]
8/7/19					moved to [redacted] move# 19-532	
8/9/19	14.02					

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/26/19		?	G	N	SO: BAR (P) RE: (R) FACE RASH; 1cm² ABRASION/	
					BRUISE (R) LOWER JAW. Ø SWELLING OR ERYTHEMA,	
					NO ACTIVE BLEEDING. CAGE WAS RECENTLY	
					CHANGED DUE TO DAMAGE. SUSPECT TRAUMA	
					2° TO BROKEN CAGE.	
					A: MINOR FACIAL TRAUMA	
					P: CTM ON OP 1x/WK. NO TX REQUIRED	[redacted]
6/28/19	13.00					[redacted]
7/1/19		G	G	N	SO: BAR (P) OPM: lethargy, ate PBS, mmu active, NEPD.	
					A/P: see 6/21 entry.	[redacted]
7/3/19					A: wt loss, appetite improved	
					P: CTM wk via workorder ✓ 1x/wk	[redacted]
7/9/19		G	G	CC	SO: BAR OPM: mmu active w/ NEPD.	
MMU [redacted] M					A/P: see 7/3. Per Vet, start mmu on matching	[redacted]
6yrs 3mos 13.06kg NRL02					supps + leave paired for supps.	
Peanuts 1.00 serving/animal Dose — 1. serving Total Dose						
1.00 serving Volume — PO Rte, SID Freq, 14 Days						
Start 07-09-2019 End 07-22-2019						
1.00 Bar Volume — PO Rte, SID Freq, 14 Days						
Start 07-09-2019 End 07-22-2019						
Volume — PO Rte, SID Freq, 14 Days						[redacted]
Start 07-09-2019 End 07-22-2019						
Fig Bar 2.00 bar/animal Dose — 2. Bar Total Dose						
2.00 Bar Volume — PO Rte, SID Freq, 14 Days						
Start 07-09-2019 End 07-22-2019						
[redacted]						[redacted]
7/12/19	13.07					
7/16/19		?	G	N	SO: BAR, paired OP: lethargic; animal recently fed,	
					unable to assess appetite, ate all supps A: weight gain	
					post lethargy, improved appetite P: CTM 1x/wk with	
					pairmate, cont supps	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/16/19	Cont'd				Rice Cereal (50%), Oranges (100%) Raisins (100%)	
					Apple (20%) ① ~~att~~ consumed. Animal had apple	
					in hand @ time of observation.	
					A: Lethargy + Appetite improving.	
					P: Vis ✓ daily, cont. Rx's + supps, OGT	
					PRN, ① ~~keep~~ consider keeping pair on top	
					cages until needed.	[redacted]
6/16/19					SO2: Re: poor app.; see above.	
6/17/19		G	G	CP	SO: BAR OPM: lethargy; No int. in PBS. 3 partial chow	
					remaining. ate most supps.	
					A/P: see 6/16 entry.	[redacted]
6/18/19		G	G	N	SO: BAR OPM: lethargy; ate all supps, bright +	
					playful today, ate PBS.	[redacted]
6/19/19		F	G	N	SO: BAR, paired Re: poor app; ate supps, drank ¼ ORT,	
					bright & interactive, 9 chow left between both cages	[redacted]
6-20-19		F	G	N	SO: BAR (P) OP: poor app: Ate 2 chow plus supps.	
					drank Ø ORT. Animal active with NEO. 10 chow	
					left between 2 cases. Animal stable.	[redacted]
6/21/19		G	G	N	SO: BAR (P) OPM: lethargy; 8 whole chow, 1 partial b/t cages.	
					Ate PBS, no interest in ORT. MMU active, demeanor	
					much improved.	
					A: stable MMU P: OP vis ✓ 1x/wk consider d/c if	
					stool quality normal 1 wk post tx end (7/7/19).	[redacted]
6/24/19		G	G	N	SO: BAR (P) OPM: lethargy; Per food log, ate 5 total	
					chow 6/23, ate supps. Ate PBS. MMU bright + active.	
					A/P: See 6/21	[redacted]
6/24/19					A: lethargy resolved, improved appetite	
					P: Re ✓ CBC/Chem + WD, WD requested, ✓ AHS 1x/wk	[redacted]

① EE, wrong word, eliminate word, [redacted] 6-16-19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] M
6yrs 2mos 14.46kg NRL02

Mirtazapine 15 mg/tablet
3.75 mg/animal Dose — 3.8 mg Total Dose
0.25 tabs Volume — PO Rte — SID Freq — 3 Days
Start 06-15-2019 End 06-17-2019
Gave first dose in OGT

Ondansetron 2 mg/mL
0.15 mg/kg Dose — 2.2 mg Total Dose
1.10 mLs Volume — SC Rte — SID Freq — 1 Days
Start 06-15-2019 End 06-15-2019
Gave dose

Metoclopramide 5 mg/mL
0.30 mg/kg Dose — 4.3 mg Total Dose
0.90 mLs Volume — IV Rte — SID Freq — 1 Days
Start 06-15-2019 End 06-15-2019
Gave dose

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6.15.19					SO: BAR OPM: Lethargy & Poor App, Animal did not eat any chow and b/t him + cage mate <10% of supps consumed. Animal suspected to have viral pneumonia, potentially w/ strep pneumoniae. Animal sedated with 0.7 ketamine ml + 0.3 dex IM. Given Metaclopramide IV, ondansetron SQ + mirtazapine OGT. 180 mls of Boost/chow/PB. Gave 500 mls of LRS SQ. Animal + cage mate moved to upper cages. 0.5 ml B12 SQ. — Ausculted lungs — no abnormalities noted and no signs cageside of ↑ RR or effort.	[redacted]
					A: Lethargy, poor app, suspected viral pneumonia.	
					P: CTM on OP + MH, OGT PRN, VIS ✓ daily. [redacted] → [redacted]	[redacted]
6/15/19		P	G	N/PEUTED	SO: QAR OP: LETHARGY, RE: POOR APP; REC. FED & SUPPS GIVEN, HAS NOT EATEN ANY. DID TAKE 3 DATES & SWALLOWED WITHOUT SPITTING OUT. MOVING WELL BETWEEN CAGES. NEPD BUT QUIET.	[redacted]
6.16.19		F	G	CC	SO: BAR, animal active and presenting himself OP: Lethargy. Much improved today w/ regards to movement and appetite. Readily took raisins. Animal paired SO consumption of biscuits (4/7) ① ~~maybe~~ ~~hard~~ to assess. Figs (50%) cucumbers (50%)	[redacted]

① EE, wrong words, should be "more difficult to" [redacted] 6.16.19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/13/19		P	G	N	SO: QAR OP: LETHARGY; ANIMAL TOOK TREATS	
					BUT THEN SPIT THEM OUT. NO CHOW IN CAGE	
					(PULLED BY STAFF). APPEARS T. HAVE EATEN	
					1/2 PBS. MOVED WELL BETWEEN CAGES.	
					A/P: SEE 6/11 ENTRY. PLAN TO SEDATE, OGT,	
					CHEST RADIOGRAPHS LATER TODAY.	[redacted]
6/14/19	14.46					[redacted]
6/14/19		P	G	~~N~~ PELLETED	SO: BAR/QAR OP: LETHARGY, RE: POOR APP;	
					RECENTLY FED, 7 CHOW + FORAGE IN CAGE.	
					OFFERED BANANA + CUCUMBER, READILY	
					ATE CUCUMBER W/ NO SIGNS OF EMESIS.	
					MOVED WELL BETWEEN CAGES. NEW BOTTLE	
					OF ORT, HAS NOT CONSUMED. STOOL PELLETED,	
					BUT MOIST. MM= PINK	[redacted]
6/14/19					CBC from 6/13 shows mild decreases	
					in ALT (36.6) + Pro (6.3) compared to 6/11,	
					possibly 2° to improved hydration - no external	
					sign of blood loss. Chemistry shows	
					further elevation in CRP (37) and	
					liver enzymes show mild increases across	
					the board: AST (114), ALT (77), GGT (100),	
					LDH (811), CPK (5583). Liver enzyme increase	
					may be 2° to lipid deposition. Albumin (2.5)	
					A: Hypoalbuminemia, ongoing inflammation,	
					vet counts consistent - suspect viral pneumonia	
					but treat w/ Ceftiofur to rule out Strep.	
					P: Give ceftiofur, restart simbadol,	
					vig ✓ daily + OGT PRN	[redacted]

MMU [redacted] M
6yrs 2mos 14.46kg NRL02

Ceftiofur Crystalline Fr
20.00 mg/kg Dose — 289 mg Total Dose
2.90 mLs Volume — SC Rte — Q4D Freq — 1 Days
Start 06-14-2019 — End 06-14-2019

Simbadol (Buprenorp
0.24 mg/kg Dose — 3.5 mg Total Dose
1.90 mLs Volume — SC Rte — EOD Freq — 3 Days
Start 06-15-2019 — End 06-17-2019

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 18

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/12/19		?	G	N	SO: QAR OP: Poor app/emesis, Re: poor app,	
					Bloody discharge; ate ≈ ½ PBS & small amt	
					of peanuts. Readily ate treats & moved off	
					of perch, appears slightly lethargic but	
					focuses well & easily grabs treats. NEPD.	
					No blood observed in cage post hosing,	
					none observed on animal. No chow left	
					in cage.	
					A/P: See 6/11 entry	
6/13/19	13.99				SO: Received sedated, well hydrated	
					& w/o back up. Collected blood, NOVA	
					showed no clinically significant changes.	
					Radiographs obtained, R lung field	
					has a consolidated area caudally -	
					suspect pneumonia. Abdominal radiographs	
					show increased digesta in bowel	
					loops & stool in rectum. Increased	
					lung sounds persist on auscultation.	
					Administered 5mg Metoclopramide & 3mg	
					ondansetron IV. Administered 500mls	
					warm LRS and OGT 230 mls	
					bolus w/ 30drops omeprazole and 5ml	
					carafate.	
					A: R sided pneumonia in caudal portion	
					of R middle lung lobe	
					P: Continue to encourage intake.	[redacted]
					extend analgesics PRN	
					19 MMU [redacted] LOCATION [redacted] 1.4 MLS KET	

Samples Collected
Date: 6/13/19
R/C SS CBC Chem20
Vol. blood 3.0 ml
Other: NOVA

MMU [redacted] M
6yrs 2mos 14.05kg NRL02

Omeprazole 20 mg/caplet
10.00 mg/animal Dose — 10. mg Total Dose
0.50 caps Volume — PO Rte — SID Freq — 10 Days
Start 06-12-2019 End 06-21-2019
[redacted]

Maropitant 10 mg/mL
1.00 mg/kg Dose — 14 mg Total Dose
1.40 mLs Volume — SC Rte — SID Freq — 7 Days
Start 06-11-2019 End 06-17-2019
Modified Extended

Rice Cereal
Dose — Total Dose
Volume — PO Rte — SID Freq — 6 Days
Start 06-14-2019 End 06-19-2019

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 7 Days
Start 06-14-2019 End 06-20-2019

WT: 13.99 CAGE TIME 3:25 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 17

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/11/19	cont.				During exam took thoracic + abd. rads: increased cardiac (R) silhouette vs. increased soft-tissue opacity of (R) cranio-ventral lung lobe. Increased soft-tissue opacities w/in (R) + (L) caudo-dorsal lung lobes. Mineral opacities w/n (axial + appendicular skeleton). ~~Abd~~ ① structures w/n. During echo, cardiologist visualized tricuspid regurg (mild) + sl. (L) ventricular wall enlargement, but not enough to cause current clinical signs. Administered 0.7mL of ondansetron IV, 0.4 mL of Buprenex IM, 0.4mL of Famotidine IM, 0.5tab of Pepto-bismol PO + 5mL of Sucralfate w/ 1 capsule of Omeprazole PO via OGT, + 1st dose of Cerenia SQ. Administered 500mL of LRS SQ. A: ~~Emesis~~ ② CBC results: RBC: 5.78, WBC: 10.3, Hct: 43.2%, MCV: 75, MCHC: 32.6, Chem results: BUN: 15, creat: 1.0, hsCRP: 30. A: Emesis, cardiomegaly w/ mild tricuspid regurg, inflammation of unknown origin, poss. regurg/aspiration. P: CTM on OPM daily, start Rx, await CBC diff + VMTH consult on rads.	[redacted]
					Admit ✓ Prob. Sheet ✓	[redacted]
6/12/19					SO: CBC diff results: neut: 74%, lymph: 19%, Fib: 400, P.P: 7.9. A: Inflammatory leukogram. P: See above 6/11 entry.	[redacted]

Cage Time 3:00 AM (PM)
15 min 2 30 min 3 45 min ___
1.25 hr ___ 1.5 hr ___ 1.75 hr ___ 2

1 recumbent, 2 movement, 3 sitting

MMU [redacted] M
6yrs 2mos 13.55kg NRL02

Simbadol (Buprenorp
0.72 mg/kg Dose — 9.8 mg Total Dose
5.40 mLs Volume — SC Rte — Q3D Freq — 3 Days
Start 06-11-2019 End 06-13-2019

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose
1.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 06-11-2019 End 07-07-2019

Enrofloxacin 100 mg/mL
5.00 mg/kg Dose — 68 mg Total Dose
0.70 mLs Volume — IM Rte — BID Freq — 10 Days
Start 06-11-2019 End 06-20-2019

Famotidine 10 mg/mL
0.50 mg/kg Dose — 6.8 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 7 Days
Start 06-11-2019 End 06-17-2019

Maropitant 10 mg/mL
1.00 mg/kg Dose — 14 mg Total Dose
1.40 mLs Volume — SC Rte — SID Freq — 3 Days
Start 06-11-2019 End 06-13-2019

MMU [redacted] M
6yrs 2mos 13.55kg NRL02

Simbadol (Buprenorp
0.24 mg/kg Dose — 3.3 mg Total Dose
1.80 mLs Volume — SC Rte — EOD Freq — 3 Days
Start 06-11-2019 End 06-13-2019

Modified
Dose
0.50 caps Volume — PO Rte — SID Freq — 5 Days

MMU [redacted] M
6yrs 2mos 14.05kg NRL02

ORT
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 14 Days
Start 06-12-2019 End 06-25-2019

MMU [redacted] M
6yrs 2mos 14.05kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 70 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 3 Days
Start 06-12-2019 End 06-14-2019

[redacted]

Animal ID# [redacted] ③ California National Primate Research Center Page # 16

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
4/5/19	13.38					[redacted]
4/3/19	13.70					
5/17/19	13.93					
5/31/19	14.05					
6/10/19		F	G	N	SO: BAR (P) RE: poor app; no chow in	
					enclosure but all pulled according to protocol	
					so no chow consumed in AM. ~~Stepps~~ ① readily	
					consumed. Active in cage. NEPD. A: First confirmed	
					report of PA. P: No tx needed @ this time,	
					CTM on ~~OPAT~~ ② routine MH.	[redacted]
					SO2: BAR (P) AAR: lethargy; readily ate treats +	
					moved b/t cages. Light pink MM. Not as	
					active as pair-mate, but more calm.	
					A2: Lethargy per lab staff + 1st report of PA	
					P2: perform CBC + NOVA + await results.	[redacted]
6/11/19					LO2: Re: Emesis after eating banana,	
					perform sedated exam + collect labs	[redacted]
					at that time	

Final Echo Result:
LVH Negative

Cardiologist guided echocardiogram performed due to: pre-shipment / pre-project / clinical / genetic
Blood pressure and heart rate readin obtained
Preliminary results: Normal / Suspec (await final results)

Comment: Mild tricuspid regurg.

NOVA results:
pH: 7.4 Hct: 45%
HCO3: 20.5 Na: 144.5 K: 3.79
Glu: 91 BUN: 13
Creat: 1.9

① RE: should be "treats" [redacted] 6/11/19
② RE: wrong word. [redacted] 6/11/19

PHYSICAL EXAM

Date 6/11/19 Weight 13.55 kg BCS 3.5
HR 95 RR 50 TEMP 99.8 ☐ Project Code
1. Integument WNL ☐ Shave Tattoo
2. Oral Cavity remnants of vomited banana
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation wheezes bilateral cranial lobes
7. Abdominal Palpation Diff. to palpate internal organs due to fat
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation Not performed. [redacted]

Animal may be unpaired or individually housed while receiving veterinary care

Obs Form 12-16-2011 G = Good

Animal ID: [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/1/19					A/P: See 1/10, assess to D/C later next wk if stool remains normal	[redacted]
2/4/19		G	G	N	SO: BAR OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: On tx. Confirmed / Unconfirmed P: CTM on routine MH. N&PD.	
					D/C Snomed Recharge	
2/8/19	13.10					[redacted]
2/22/19	13.22					
3/13/19	13.14					
3/22/19	13.04					

PHYSICAL EXAM

Date 3/25/19 Weight 12.98 BCS 3.0

HR 162 RR 36 TEMP 98.7

☐ Project Code

☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NG

SO: Received sedated
A: Stable animal
P: CTM on routine Bloods

Animal may be unpaired or individually housed while receiving veterinary care

3/25/19 1.5 MLS KETMINE IM, BLED ____ MLS, ROOM ROUND UP,
WT: 12.98 TB TEST LEFT EYE 24HR-✓ 48HR-✓ 72HR-✓, ANIMAL MONITORED UNTIL RECOVERED [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/5/19		G	G	SS	SO: BAR Pe: liq stool, OPM: diarrhea; ate PBS, NEPD.	
					All stool semi solid/liquid in appearance.	
					A: liquid stool on tx P: cont tx/wk in OPM + as	
					reported.	[redacted]
1/7/19		G	G	N SS	SO: BAR OPM: diarrhea; mostly normal stool seen in	
					cage. small amount semi solid w/ no liquid seen.	
					NEPD, no tail staining.	[redacted]
Date /		Result				
SS:						
R/C: 1/1/19		Negative				[redacted]
1/9/19		G	G	N	SO: BAR OPM: Diarrhea.	[redacted]
1/10/19					A: Improved stool on PBS	
					P: V/S ✓ tx/wk + as reported, assess	
					to D/C if stool remains normal 1	[redacted]
					wk post completion of PBS	[redacted]
1/11/19	12.22					[redacted]
1/11/19		G	G	N	SO: BAR OPM: Diarrhea.	[redacted]
1/14/19		G	G	N	SO: BAR OPM: Diarrhea; No liq. stool observed, NEPD.	
					PBS ends ~~01/00/19~~ ① 1/27/19	[redacted]
1/17/19					A/P: See 1/10	[redacted]
1/22/19		G	G	N	SO: BAR OPM: Diarrhea; No liq. stool seen. NEPD.	[redacted]
1/24/19					A/P: See 1/10	[redacted]
1/25/19	12.100					[redacted]
1/25/19		G	G	N	SO: BAR OPM: diarrhea. normal	
					stool present in cage pan	[redacted]
1/29/19		G	G	N	SO: BAR OP: diarrhea; normal stool A: NP diarrhea	
					resolved with PBS P: if normal stool persists d/c 2/4	[redacted]

① Re [redacted] 1/22/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
12/31/18		G	G	N	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. only N stool in cage A: Unconfirmed 2nd recent report P: CTM MH	[redacted]
1/1/19		G	G	L	SO: BAR, Re: Liquid stool. Animal has confirmed liquid stool. A: 3rd recent report of liquid stool P: Vis ✓ 1x/wk on OPM Admit to OPM Start PBS Per NVM collected R/C	[redacted]
1/2/19		G	G	L	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Liquid stool, on tx. P: CTM on OP 1x/wk & MH.	[redacted]
1/3/19		P/F	G	SS: L	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Varied stool, on tx P: CTM on OP 1x/wk & MH. +Re: PA. Ate 0 chow, all forage, fresh fruit & veggies given by lab staff while task training & readily ate peanuts. A2: Poor app for chow, fair app. for fresh fruit, veggies & peanuts.	[redacted]
1/4/19		F/P	G	LL	SO: BAR OPM: Diarrhea + Re: liquid stool. Noted liquid stool in pan @ PM check, noted clean cage this morning. A: On tx for liquid stool. P: CTM on OP 1x/wk * as reported on MH.	[redacted]

Samples Collected
Date: 1/1/19
R/C SS CBC Chem20
Vol. blood_____
Other:_____

MMU [redacted] M
5yrs 8mos 12.48kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose

1.00 sndwch Volume — PO Rte — BID Freq — 27 Days
Start 01-01-2019 End 01-27-2019

Admit ✓ Prob. Sheet ✓

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/28/18	11.83	[redacted]			[redacted] 9/28/2018	
					1.3 mls Ket. BCS=3 Tartar: 0 1 2 3 4 Teeth Scaled Y N	[redacted]
					TB Test: R L Eye 24hr____ 48hr____ 72hr____	
					Trimmed nails	
					1 HC cage	
					MONITORED UNTIL RECOVERED	
10/20/18		F	G	N	SO: BAR RE: lixit inadvertently not connected. Did Not eat Most am chow eagerly accepted treats.	
					A: stable animal.	
					P: Hook up lixit based on Nova results of smallest animal. CTM on MH	[redacted]
10/29/18					Moved to ⟹ [redacted] N/O 18-610	[redacted]
11-5-18					moved to [redacted] mv # 18-621	[redacted]
11/8/18	11.70				BOX WT	[redacted]
11/14/18	11.94					[redacted]
① ~~11/20/18~~		~~P~~	~~G~~	~~N~~	~~SO: BAR , Re: Poor appetite. Ate 1 chow and did/did not eat forage, did/did not eat fresh fruit / treats.~~	
					~~A: Poor, Fair, Good appetite. ___ recent confirmed report.~~	
					P: CTM on MH / OP	
11/30/18	10.82					[redacted]
12/13/18	12.18					[redacted]
12/28/18	12.48					
12/30/18		G	G	SS, L	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. Mostly semisolid, small amount liquid. NEPD.	
					A: 1st recent report	
					P: CTM on routine MH.	[redacted]

D.E.E. Incorrect healthjacket. 11/22/18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 11

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/10/18					Cardiologist-guided echocardiogram performed due to:	
					pre-shipment / pre-project / clinical	
					Preliminary Results:	
					Normal / LVH / Suspect (await final results)	
					Comments: _ Final Echo Result: _____ **LVH Negative**	[redacted]
8/10/18	MMU [redacted]				1.4 MLS KET IM, D→ 1302 SPF01 W.O. 2437	[redacted]
WT: 11.56	CAGE TIME 3:15 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___					
					Animal #: [redacted] Room#: [redacted]	
8/11/18		6	6	N	SO: BAR , RE: Vomit. Noted vomit in cage pan. A: Confirmed vomit. ____ recent report. P: CTM on MH / OP.	[redacted]
① 8/21/18	11.45				1.2 KET IM , BLED ____ MLS TB TEST R EYE 24HR___ 48HR___ 72HR___ MONITORED UNTIL RECOVERED	[redacted]
8.24.18					MOVED FROM [redacted] → [redacted] PER MV# 18-501	[redacted]
8.28.18					SO: Transported to [redacted] for MRI, project NRL02 WO# 2614. Sedated with ketamine 1.3 mls, Animal was / was not placed in Steriotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal did/did not receive Ketoprofen IM	
9/7/18	11.90					[redacted]
9/21/18	12.26					

① E.E; late entry; file was not found at time when round-up procedures were done. 8/10/18. [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/13/17	9.74				X pre-project physical __pre-shipment physical __weaning physical	
					See associated P.E. sheet for additional information.	[redacted]
12/13/17					MMU [redacted] 1.1 CC KETAMINE IM, D→1302 WO#4072 RED01 WT: 9.74 CAGE TIME: 9:25 15MIN 1 30MIN 2 45MIN 3 1HR___ 1.25HR___ 1.5HR___ 1.75___ 2HR___	
12.22.17	10.07				Box wt	[redacted]
2/23/2018 WT: 10.32					MMU [redacted] 1.2 MLS KET IM TB TEST LEFT EYE: 24HR____, 48HR____, 72HR____ ANIMAL MONITORED UNTIL RECOVERED / ROOM ROUND UP ANIMAL MONITORED UNTIL RECOVERED	[redacted]
3.22.19					MOVED TO [redacted] MOVE# 18.177	[redacted]
6/21/18	11.14				Animal #: [redacted] Room#: [redacted] Raw wt	
7/31/18					CT SCAN MRL02	[redacted]
7/ 31/18					MMU [redacted] 0.8 MLS TELAZOL IM W.O._____ WT: CAGE TIME 9:20 15MIN 1 30MIN 1 45MIN 1 1HR 2 1.25HR 2 1.5HR 3 1.75HR___ 2HR___	[redacted]
8/3/18					MMU [redacted] 1.2 MLS KET IM, BLED 3 MLS, D→ 1310 NRL02 W.O. 2407 WT: 11.29 CAGE TIME 9:00 15MIN 1 30MIN 2 45MIN 3 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___	[redacted]
08/03/18					✓ pre-project physical __pre-shipment physical __weaning physical	
					See associated P.E. sheet for additional information.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
6/16/20					BAR sides are ~4 (R) side is ~4 mm²	
					hyperpigmentation + ↓ crusting	
					(L) side is ↑ 3 mm² A: Recurrent	
					sperm granuloma P: CTM on OP	
					vs ✓ 1/wk	[redacted]
6/20/20		G	G	N	SO: BAR (P) RE: (R) inguinal red/OP: sperm	
					granuloma; (R) spermgranuloma is	
					clean, slightly moist; ~2-3 mm² edges	
					well adhered, very mild erythema, &	
					swelling ↓ D/C, ↑ attention paid, active	
					and interactive, stretches well, took	
					treats, NEPD	
					A/P see 6/16	[redacted]
6/23/20		G	G	N	SO: BAR (P) OPM sperm granuloma	
					(R) ~4.5 mm² (L) ~8 mm² w/ swelling	
					near ↓ A: Recurrent granuloma	
					starting to ↑ in hyperpigmentation	
					& crusting. Animal may be starting	
					to aggravate area (or vice versa)	
					P: ↓ date this wk, if any concerns	
					trend tx	[redacted]
6/26/20	17.19				Box weight	[redacted]
6/27/20		G	G	N	SO: BAR OPM sperm granuloma bilat	
					(R) ~4 mm² (L) 5-6 mm² dry, ↓ crusting	
					hyperpigmentation A: Recurrent sperm	
					granuloma P: CTM on OP vs ✓ 1/wk	
					tx w/ meloxicam if any signs of	
					moisture, swelling, or picking	[redacted]

MMU [redacted] M
9yrs 4mos 16.89kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

~~1.10 mLs~~ Volume — PO Rte — SID Freq — 3 Days
Start 06-23-2020 End 06-25-2020

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
					(L) site is ~0.5 cm, ∅ swelling, very mild erythema, ∅ attention paid to either site, active	
					and interactive, readily took treats, NEPD	[redacted]
6/9/20		G	G	CC	SO: BAR (R) OP: sperm granuloma; Both	
					sites C+D, slightly scabbed, (L) site has	
					very mild erythema, (R) site has mild	
					erythema, ∅ swelling, ∅ attention paid	
					NEPD, took treats, stretches well + active	[redacted]
6/10/20		G	G	CC	SO: BAR, (R) OP: sperm granuloma; both sites C+D,	
					no discharge or moist exudate. No erythema. Does	
					not appear to be picking.	
					A: improved sperm granuloma site inflammation	
					P: CTM on OP 3x/wk	[redacted]
6/12/20		G	G	CC	SO: BAR, OPM: Sperm Granuloma.	
					R/L sperm granulomas C+D	
					~1cm² each, no d/c w/mild→moderate	
					erythema.	[redacted]
6/14/20		G	G	CC	SO: BAR RE: inguinal red/crusty; Both	
					sperm granuloma sites are C+D scabbed	
					∅ swelling, ∅ erythema, ∅ D/C, ∅ attention	
					paid, both L+R sites are ~0.5 cm², active	
					and interactive, took treats, NEPD	
					A/P See 6/10	[redacted]
6/15/20		G	G	N	SO: BAR OP: sperm granuloma; R/L granuloma	
					sites are C+D, no discharge, draining tracts	
					appear closed, discoloration around sites, unable	
					to determine if its erythema or scarring, NEPD	[redacted]
6/16/20		G	G	N	SO: BAR OPM sperm granuloma	[redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] M
9yrs 3mos 16.89kg NRL03

Meloxicam 1.5 mg/mL
0.20 mg/kg Dose — 3.4 mg Total Dose
2.30 mLs Volume — PO Rte — SID Freq — 1 Days
Start 06-05-2020 — End 06-05-2020

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose
1.10 mLs Volume — PO Rte — SID Freq — 2 Days
Start 06-06-2020 — End 06-07-2020

DDI G-141922 Ins05JUN@11:46 Prn05JUN@11:46

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
6/5/20		G	G	G	SO: BAR, Rec: Red crusty inguinal (R) side.	
					APM: Sperm granulomas. (R) inguinal	
					Sperm granuloma mostly C+D w/ dried	
					blood ~1 cm² in diameter with mild	
					thickening and scarring. (L) inguinal	
					Sperm granuloma C+D ~1 cm² pink	
					scarring. SRA visualized animal	
					picking at inguinal area in AM. No	
					picking visualized during observation	
					A: Sperm granulomas (R) inguinal irritated	
					w/ possible picking	
					P: VIs ✓ Daily OPM (R) inguinal	
					Start Meloxicam	
					Reassess 6/8	[redacted]
6/6/20		G	G	C	SO: BAR (P) OP: Sperm granuloma,	
					Both sides are C+D scabbed, edges	
					well adhered, no D/C, ⊘ swelling,	
					mild erythema, ⊘ other pain on observation,	
					Active + interactive, NEPD, readily took	
					treats	[redacted]
6/7/20		G	G	N	SO: BAR (P) OPM: Sperm granuloma; (R) side	
					~1 cm² C+D w/ mild erythema + no swelling.	
					(L) side lesion ~0.5 cm² C+D w/ very mild	
					erythema + no swelling visualized, no D/C.	
					Moves well in cage + stretches well. NEPD,	
					readily ate treats.	[redacted]
6/8/20		G	G	N	SO: BAR (P) OP: Sperm granuloma; (R) site	
					is CDI, ~1 cm² ⊘ swelling, mild erythema	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 50

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5/9/20		G	G	N	SO: BAR (P) RE: CRUSTY INGUINAL; BOTH SIDES	
					C+D W/ D ERYTHEMA. NEPD	
					A/P: SEE 5/4	[redacted]
					Recharge	
5/13/20		G	G	N	SO: BAR OPM sperm granuloma –	
					bilaterally C+D & whitish crusting	
					w/ darker discolored healed fistulas	
					(R) side ~4mm, (P) side 6-7mm	
					A: Sperm granuloma currently healed	
					P: CTM 1/WK in OP	[redacted]
5/18/20		G	G	N	SO: BAR OPM sperm granuloma	
					Bilaterally C+D (R) side ~4mm 2	
					(P) side ~5mm² & whitish crusting	
					A/P see 5/13/20	[redacted]
5/26/20		G	G	N	SO: BAR OPM sperm granuloma	
					Bilaterally C+D (R) ~4mm², (P) ~5mm²	
					sl. white crusting w/ hyperpigmentation	
					A/P see 5/13/20	[redacted]
5/29/20	14.89				Box Weight	[redacted]
5/30/20		G	G	N	SO: BAR. RE: R inguinal red crusty. (P) Dried	
					discharge. Very mild erythema. NEPD.	
					Readily taking treats. OP: Sperm granuloma.	[redacted]
6/2/20		G	G	N	SO: BAR OPM sperm granuloma	
					Bilaterally C+D (P) side is healing	
					really well (R) side ~4mm² w/ mild	
					white crusting & hyperpigmentation	
					A/P see 5/13/20	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] (1) [redacted]

California National Primate Research Center

Page # 2/9

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
4/22/20		G	G	N	SO: BAR (P) OPM sperm granuloma. Both sides healing well.	
					Discolored dark red skin L side 0.9 cm, R side 0.5 cm. The eroded	
					area in the center of the R lesion seen yesterday is now scabbed	
					over. No active bleeding or discharge.	
					A: Sperm granuloma lesions improving w/ meloxicam	
					P: Reassess tomorrow 4/23; Consider extending meloxicam x 3d.	[redacted]
4/23/20		G	G	CC	SO: BAR OP: sperm Granuloma; (L) side	
					very mild enyth & crusted D/C.	
					(R) side very mild enythema. NEPD	
					A/P: see 4/22. Assess T1 ↓ Vs IF	
					stable post Tx end	[redacted]
4/24/20		G	G	CC	SO: BAR OP: sperm granuloma; granulomas	
					unchanged from 4/23/20	
					A: Granulomas unchanged	
					P: CTM on OP 3x/week	[redacted]
4/27/20		G	G	N	SO: BAR OPM sperm granuloma (L) side	
					5-8 mm C+D contracting down well	
					(R) 3-4 mm C+D healed P: CTM on	
					OP 1/wk	[redacted]
5/1/20	16.68				Box Weight	[redacted]
5/2/20		G	G	CC	SO: BAR (P) Re: Red/crusty Ing. (L) side;	
					(L) Granuloma has sm. amt white discharge.	
					Enythema or swelling. NEPD	
					A: Chronic sperm Granuloma	
					P: CTM on OP 1x/wk	[redacted]
5/4/20		G	G	N	SO: BAR OPM sperm granuloma - both	
					sides C+D & whitish scabs (L) side 1 lemon	
					(R) side 1-4 mm A: Sperm granulomas - bilat	
					recurrent currently resolving P: 1/wk CTM TX PRN	
					w/ meloxicam	

(1) Vt 5/8/20 [redacted]

rm 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L= Liquid, B= Bloody

23-01594_000453

UCD 0416

Animal ID# [redacted] **California National Primate Research Center** Page # 48

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
4/13/20					P(cont) If animal is picking @ sperm gran site, tx w/ meloxicam ① Monitor v sites 1/wk & Treat PRN	KC
4/14/20		G	G	N	SO: BAR OPM sperm granuloma. Observed white serous crusting over ing region lesions (R) ≤0.5 mm, (L) ≤1 cm. No evidence of picking otherwise. C&T A: Recurrent sperm granulomas w/ occ picking. P: ✓ 1/wk, if signs of picking, ~~SA~~ CA meloxicam tx	[redacted]
4/16/20		G	G	CC	SO: BAR. Re: trauma L side of face, single pinpoint scab on L side of proximal muzzle. No swelling or erythema. NCPD. Sperm granuloma sites crusted, do not appear inflamed. A: minor scab to muzzle, stable sperm granuloma sites P: CTM on OP 1x/wk, see 4/14	[redacted]
4/17/20		G	G	CC	SO: BAR. Re: crusty inguinal, white crusted material at L site. No evidence of picking at either site. A/P: see 4/14	[redacted]
4/20/20		G	G	N	SO: BAR OPM sperm granuloma. Clean + dry; (L) side w/ slight white crusting, (R) 0.5 cm, (L) 0.7 - 0.8 cm. Both discolored. A/P: see 4/14	[redacted]
4/21/20		G	G	N	SO: BAR OPM sperm granuloma Re: genital crusting, red + cmf (R) side is worst in the center & lger 1 cm w/ white crusting, discolored skin. Looks as though animal is picking @ site. ~~SA~~ CA oral meloxicam daily C&T PRN	[redacted]

MMU [redacted] M
9yrs 2mos 15.40kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.5 mg Total Dose

1.00 mLs Volume — PO Rte — SID Freq — 3 Days
Start 04-21-2020 End 04-23-2020

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/30/20		G	G	N	SO: BAR OPM sperm granuloma (R) side: is still ≤1cm w/a white crusty scab but closed dry, & slowly healing (R) side: is fairly sm ≈0.5cm discolored from chronicity but closed healing well A: Recurrent sperm granuloma P: CTM ✓ sites 1/wk, esp. while animals are not being tested by lab staff CPTPRN. Tx w/ meloxicam if animal seems to pick @ sites	[redacted]
4/2/20		G	G	CC	SO: BAR, OP: sperm granuloma, Re: red crusty inguinal R side. R side has sm. amt. of dried d/c but site is crusted w/ no active d/c. Mild erythema. L side scabbed, dry. A/P: see 3/30	[redacted]
4/15/20		G	G	CC	SO: BAR RE: CRUSTY/RED (L) INGUINAL; SMALL AMT DRIED D/C (L) INGUINAL AREA; W/ MILD ERYTHEMA. NEPD A/P: SEE 3/30	[redacted]
4/16/20		G	G	N	SO: BAR OPM sperm granuloma (R) side B almost completely healed w/ some skin discoloration (R) side is healing v. well contracting down ~0.5cm w/ lt scab. A/P see 3/30	[redacted]
4/13/20		G	G	N	SO: BAR OPM sperm gran OPM Re: ing crusty bloody (R) side. is ~4mm discolored & almost completely healed (R) side has sl. crusting, discolored not open ~8mm A: Animal possibly picking @ right side/scab P: Rev 4/14 to confirm	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/18/20 (cont'd)					A: improved sperm granuloma site inflammation, meloxicam	
					ended 3/15	
					P: CTM on OPM 2x/wk	[redacted]
3/19/20		G	G	N	SO: BAR OPM sperm granuloma Re: red	
					ing (P) side (P) side has a scab but	
					granuloma is contracting down well	
					No signs of picking, A/P see 3/18	[redacted]
3/22/20		G	G	N	SO: BAR, RE: L ing. crusty red; both L + R sperm granuloma's	
					C+D, scabbed. L ~ 0.5 cm² w/ mild eryth. & attn.	
					paid.	
					A/P: see 3/18.	[redacted]
3/23/20		G	G	N	SO: BAR OPM: sperm granuloma. Two	
					lesions ~0.5 cm² each on pubis. Mild	
					erythema, but no d/c noted. Appears	
					to be contracting and MMU does not	
					appear to be picking. Meloxicam	
					ended 3/15.	
					A: sperm granuloma resolving slowly	
					P: CTM on OPM 2x/w, restart	
					Meloxicam if starts picking again	[redacted]
3/26/20		G	G	N	SO: BAR, OP: sperm granuloma, lesions are C+D w/ mild	
					erythema/crusting. No active d/c	
					A/P: see 3/23	[redacted]
3/27/20		G	G	N	SO: BAR, (P), Re: Red crusty inguinal (L) side	
					OPM: Sperm granuloma. Slight moisture	
					at each area w/ ϕ erythema, no attention	
					to wound. White coloration at wound.	
					A/P: See 3/23 per DVM	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P = Poor, N = Normal, SS = Semi Solid, L = Liquid, B = Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
3-11-20					Crust buildup. NO picking at time of observation.	
					Animal Active with NEPD.	[redacted]
3-12-20		G	G	CC	SO BAR (P) OP/RS: sperm granuloma; (L) side	
					appears less irritated today, Some swelling has	
					reduced. NO signs of fresh discharge. looks	
					C+D. Animal Active - NEPD. NO picking noted at	
					observation.	[redacted]
3/13/20		G	G	N	SO: BAR (P) OP: sperm granuloma; granuloma sites	
					mildly erythematous + crusted, not moist. Less	
					surrounding irritation / erythema than previous	
					assessments. NEPD. Not attentive to areas.	
					A: improvement of sperm granuloma site inflammation	
					on meloxicam	
					P: CTM on OP 3x/wk, cont. meloxicam (finishes 3/15).	[redacted]
3/16/20		G	G	N	SO: BAR (P) OP: sperm granuloma; granuloma sites crusted/	
					scabbed no active d/c or moisture. Very minimal erythema	
					localized to region. NEPD. Not attentive to area	
					A: improved granuloma site inflammation (meloxicam ended	
					3/15)	
					P: CTM on OP 3x/wk + assess for recurrence of inflammation	
					off meloxicam.	[redacted]
3/17/20		G/G	G/G	N	SO: BAR (P) OP: sperm granuloma (P)	
					site is ~5-7mm discolored skin	
					healing well (L) site is >1cm w/ white	
					crust over most of discolored tissue	
					A/P see 3/16	[redacted]
3/18/20		G	G	N	SO: BAR (P) OP: sperm granuloma; R side healing well	
					L side w/ sm. amt. of blood, crust remains over site w/ min. erythema	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU[redacted] **California National Primate Research Center** Page # 38

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/7/20		G	G	N	SO: BAR, OPM: irr. sperm granuloma; area ctD, & attn. paid,	
					& blood seen.	[redacted]
					A/P: see 3/6 ctm on OP 3X/wk.	
3/6/20		G/G	CC		SO: BAR (P) Re: crusting resol - confirmed	
					(P) side is still mod erythema but also	
					D in skin present. Appears closed	
					& (D) side is much better A: Improving	
					sperm gran on meloxicam P:	
					CTM 3/9, if any concerns	
					extend meloxicam	[redacted]
3-9-20		G	G	CC	SO BAR, OP: Sperm gran: mild erythema and	
					scabbing of sites. Animal active with NEPD.	
					Animal not paying attention to them.	[redacted]
3-10-20		G	G	CC	SO BAR OP: Sperm gran: mild erythema and	
					scabbing present. granuloma appears healthy.	
					Animal active with NEPD, Talked to techs:	
					no evidence of pain or discomfort in Animals	
					actions. Animal not paying attention to it.	[redacted]
3/10/20		G	G	N	SO: BAR (P) OP: sperm granuloma, L side: ~1 cm	
					wound w/ mod erythema + moisture. R side: ~7mm	
					scabbed, less erythematous. Not paying attention to it	
					A: inflammation of sperm granuloma sites bilaterally	
					unsure if animal is picking at area	
					P: Restart meloxicam, cont. to VIS✓ daily, assess to ↓	
					VIS✓ later this wk.	[redacted]
3-11-20		G	G	CC	SO BAR, OP: Sperm granuloma; (L) side appears	
					to have D/C (dried) on granuloma, looks wet,	
					mod erythema noted. (R) side looks ctD with mild	

MMU[redacted] M
9yrs 0mos 15.40kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.5 mg Total Dose

1.00 mLs Volume — PO Rte — SID Freq — 6 Days
Start 03-10-2020 End 03-15-2020

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2-25-20		G	G	CC	SOBAR, RE: Inlg crusty Red: mild erythema.	
					noted at Granuloma sites. NO fresh trauma	
					Animal appears to be leaving alone. NO D/C	
					OR swelling. A: Persistant sperm granulomas	
					P: cbm on m.H. see A/P Dated 2-21 also.	[redacted]
2/29/20		G	G	N	SO: BAR (P) RE: Red ing. crusty; stable sperm granulomas	
					(1 @ L + R ing. regions). Mild moisture, & eryth. or swelling	
					A/P: see 2/21.	[redacted]
3/5/20		G	G	N	SO: BAR (P), Re: Red crusty inguinal. (L)	
					inguinal ~5mm² sperm granuloma C+D w/	
					dried blood and crusting, no swelling or erythema.	
					(R) inguinal sperm grauloma ~1cm² in diameter	
					C+D w/dried blood, no erythema or pickers.	
					A: R/L inguinal sperm granulomas Stable	
					P: Cbm on MH	
					no tx needed at this time	[redacted]
3/6/20	15.9				Box Weight	[redacted]
3/6/20		G	G	CC	So. BAR RE: Red/Crusty Ing. (R) ing.	
					mild inflammation (erythema) w/ small	
					amt. of dried blood. (L) ing area Mod	
					erythema w/ mild swelling area ~ 0.5cm²	
					w/ mod. amt. of dried blood. MMU picking	
					A: sperm granulomas, inflamed (mild)	
					P: Start Meloxicam, vis / Daily	
					D/C when healed. If improved	[redacted]
					3/9 consider d/ checks.	

MMU [redacted] M
9yrs 0mos 15.40kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.5 mg Total Dose

1.00 mLs Volume — PO Rte — SID Freq — 3 Days
Start 03-06-2020 — End 03-08-2020

Admit ⊗ Prob. Sheet ⊗

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/21/20	cont				A: Confirmed Slow healing sperm granulomas.	[redacted]

PHYSICAL EXAM

Date 2/21/20 Weight 15.91 BCS 3.0

HR 186 RR 36 TEMP 99.8 ☐ Project Code ☐ Shave Tattoo

1. Integument WNL (see urogen.)
2. Oral Cavity mild tartar scaled
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital Bilateral vasectomy site draining, sites scabbed
12. Rectal Palpation NE 2-3 mm marginal pink scar tissue, no erythema

Animal may be unpaired or individually housed while receiving veterinary care

A: Chronic, intermittent drainage from sperm granulomas w/ pink scar tissue

P: D/C from QM, continue to monitor via routine PEs

[redacted]

⊗ D/C ⊗ Snomed ⊗ Recharge

2/23/20		G	G	N	SO: BAR (P) RE: ING. AREA; MILD ERYTHEMA @ BOTH SPERM GRANULOMA SITES. NO VISIBLE D/C, & SWELLING. NEPD A: PERSISTANT SPERM GRANULOMAS P: CTM ON MH	[redacted]
2/24/20		G	G	N	SO: BAR (P), RE: crusty ing. (R) inguinal open ~1cm² wound C+D w/dried blood no drainage. No erythema. No picking. (L) inguinal ~1cm² mild swelling. Sperm granuloma is white w/purple coloration around margins. NEPD. A: Persistant Sperm Granulomas P: CTM on MH NO Tx needed at this time per QM	[redacted]

Animal ID# [redacted] **California National Primate Research Center** Page # 35

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
2/20/20		G	G	N	SO: BAR OPM Sperm granuloma Obs ~ 5mm diameter w/ mild/mod erythema. Animal appears comfortable. Recurrent sperm gran P: C/T daily (project sums) & Offer meloxicam if cyg noted discomfort/irritation daily tomorrow & if repeated otherwise. ✓ vis MWF	[redacted]
2-20-20		G	G	CC	SO BAR op/RE: Inguinal crusty. granulomas are CHD, NO: swelling, mild erythema noted. Animal seems to be leaving alone. Animal active with NEPD. A/P see above	[redacted]
2-20-20					SO2: Ketoprofen stopped on 2-18-20 & meloxicam started per DVM.	
2-21-20	15.91				1.8 mls Ket. BCS=3.0 Tartar: 0 1 2 3 4 Teeth Scaled Y N TB Test: R L Eye 24hr ___ 48hr ___ 72hr ___ wt. 15.91 ANIMAL MONITORED UNTIL RECOVERED 0.2 ml Dexamed / Atip IM	[redacted]
2/21/20		G	G	N	SO: BAR, OPM: Sperm Granulomas. (×2) ~1cm² each sperm granulomas CHD w/ dried blood and mild erythema. No d/c present. No picking. NEPD. Re: Crusty inguinal.	[redacted]

MMU [redacted] M
9yrs 0mos 16.30kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.6 mg Total Dose
1.10 mLs Volume — PO Rte — SID Freq — 3 Days
Start 02-18-2020 End 02-20-2020

MMU [redacted] M
9yrs 0mos 16.30kg NRL03

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 82 mg Total Dose
0.80 mLs Volume — IM Rte — SID Freq — 1 Days
Start 02-18-2020 End 02-18-2020

2/21/2020

Animal ID# [redacted]

California National Primate Research Center

Page # 34

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1-24-20	16.2					[redacted]
2-7-20	16.3					[redacted]
2/15/20		G	G	N	SO: BAR (P) RE: INGUINAL CRUSTY; R & L ING. AREAS HAVE VERY MILD ERYTHEMA & ARE MILDLY CRUSTY. NEPD A: PERSISTANT SPERM GRANULOMAS P: CTM ON MH. C&T AS NEEDED	[redacted]
2/17/20		G	G	N	SO: BAR RE: red crusty inguinal; sperm granulomas are CTD, no discharge or swelling AP: see previous entry	[redacted]
2-18-20		G	G	CC	SO: BAR, RE: Crusty inguinal; Animal has 2 sperm granulomas that look irritated and swelled. Per Dum start ketoprofen. Animal seems to be leaving alone. A: irritated sperm granulomas. P: VIS ✓ daily until keto is finished (2-20) then Assess to D/C.	
					Admit ⊗ Prob. Sheet ⊗	[redacted]
2-19-20		G	G	CC	SO BAR. OP: sperm granulomas; sites appear weepy to touch. Erythema is resolving, swelling is also resolving. Animal is active with NEPD. Does not seem to be picking at it. A: irritated sperm granulomas resolving. P: ctm on op/mh.	[redacted]
① 2/20/20						

MMU [redacted] M
9yrs 0mos 16.30kg NRL03

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 82 mg Total Dose

0.80 mLs Volume — IM Rte — SID Freq — 3 Days
Start 02-18-2020 End 02-20-2020

① void | [redacted] 2/20/20

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
11-27-19	16.7					[redacted]
12/13/19	16.7				Box weight	
12-27-19	16.5					
1-10-20	16.6					
1/13/20		G	G	N	SO: BAR AAR - persistent bilat	
					sperm granuloma. Noted moist d/c	
					5mm - 1cm bilat (lab sprays area	(DNB)
					when problematic) A: Persistent	
					bilat sperm granuloma P: CTM on	MH
					C&T PRN. Just cont to monitor	
					as there isn't a way to "fix"/"repair"	
					sperm granulomas. However, if	
					they become inflamed, consider	
					antiinflam tx PRN	[redacted]
1/15/20		G	G	N	SO: BAR Re: sperm granulomas	
					bilat - both dry/reducing. No	
					inflammation. A: Recurrent	
					sperm granulomas. P: CTM on MH	
					C&T if needed	[redacted]
1/18/20		G	G	N	SO: BAR Re: Ing. red crusty; L ing. area has persistent	
					sperm granuloma (see above). Area C&D w/ crusty d/c.	
					NEPD, mmu reality ate treats.	
					A/P: see 1/15.	[redacted]
1/22/20		G	G	N	SO: BAR Re: Ing Red crusty, R/L	
					inguinals (C&D) ~1cm each in diameter	
					sperm granulomas with very mild erythema.	
					A: Recurrent sperm granulomas	
					P: See 1/15 per DVM	[redacted]

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/1/19		G	G	N	SO: PBAR Reinjected + swollen Noted	
					bilat sperm granulomas (R) side ~5 mm²	
					(R) side 2 mm² mild/mod erythema	
					w/ of recurrence P: When animal	
					is chemed, take SPA to wipe w/	
					DNS soaked gauze CTM Admit to	
					OR q V 1-2x's/wk C+ PRN	
					Admit ⊗ Prob. Sheet ⊗	[redacted]
10-15-19		G	G	N	SO BAR. OP: bilat sperm Granulomas, clean and	
					dry, mild erythema. Animal not paying attention	
					to them.	[redacted]
10/17/19					A: Chronic intermittent sperm granuloma	
					draining tracts	
					P: VIS ✓ 1x/wk, assess to D/C	
					next wk if no sign of discomfort	[redacted]
10-18-19		G	G	N	SO: BAR OP: bilat sperm Granulomas; areas CTO	
					NO swelling, Erythema or bruising noted. Animal active	
					with NSAID. A: sperm Granulomas resolved	
					P: D/C from opm.	
					⊗ D/C ⊗ Snomed ⊗ Recharge	
10/18/19	16.6				Box Weight	[redacted]
11/1/19	16.8					
11/5/19					MMU [redacted] moved to [redacted] Move # 19-780	
11/14/19	16.5					

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/12/19	15.5					[redacted]
7/26/19	15.9					[redacted]
7-30-19		G	G	cc	SO: BAR, RE: Inguinal crusty: Animal has	
					bi-lateral Sperm Granulomas. mild erythema	
					and scabbing noted. Animal is active with	
					NEPD. Animal not paying attention to them.	
					A: Sperm granulomas	
					P: ctm on m.it. no tx needed.	[redacted]
8/9/19	15.5					[redacted]
8/23/19	15.8					[redacted]
9-6-19	15.71				[redacted] [redacted] **9/6/2019**	
					1.9mls Ket. BCS=3.5 Tartar (0) 1 2 3 4 Teeth Scaled Y (N)	
					TB Test: (R) L Eye 24hr___ 48hr___ 72hr___	
					.3 Dexmed/ATIPIM	
					Patchy Alopecia Legs & Arms	
					Sperm granuloma TWO Sites	
					CDI	
					ANIMAL MONITORED UNTIL RECOVERED	[redacted]
9/2/19		G	G	N	SO: BAR Re: Poor appetite. Ate 7 chow and (did)/did not eat forage (did)/did not eat fresh fruit /treats. ∅ CHOW LEFT FROM	
					A: Poor, Fair (Good) appetite. 1st recent ~~confirmed~~ report. Suspect 2° To Recent Seduction MORNING FEEDING	
					P: CTM on (MH) OP	[redacted]
9/20/19	16.4					[redacted]
9/22/19		G	G	N	SO: BAR (P) Re: Inc. Reo; Bilateral	
					Sperm Granulomas. ∅ discharge or	
					crusty areas, ∅ erythema. NEPD	
					A/P: See 7/30 entry	[redacted]
10/4/19	16.2				Box Weight	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/8/19	16.2					[redacted]
2/8/19	MMU [redacted] 1.7 CC KET /D->1310				W/O 4518 NRL02	
WT:	CAGE TIME 2:30 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___					[redacted]
3-14-19		G	G	N	So: BAR Re: Liquid Stool. Stool in cage was normal, semi solid, liquid, clean cage A: Confirmed, Unconfirmed. P: CTM	
						[redacted]
3-15-19		G	G	N	SO: BAR RE: liquid stool, stool in cage was normal. A: unconfirmed. report. P: ctm on m 17.	[redacted]
3/18/19					Cytology from 2/25 confirms discharge from sperm granuloma is sperm w/ no evidence of infection. A/P: See 2/25	[redacted]
3/22/19	16.5					
4/12/19					moved to [redacted]	
4/24/19					Moved to [redacted]	
5/3/19	15.8					
5/17/19	15.9					
6/27/19		G	G	N	SO: BAR (P) RE: ING. TRAUMA (CRUSTY; (L) & (R) SPERM GRANULOMAS APPEAR TO HAVE OPENED, ARE CRUSTY W/ Ø ERYTHEMA OR SWELLING NOTED. NOT ACTIVELY ATTENTIVE TO AREAS. READILY ATE TREATS & MOVING WELL W/ NEPD. A: PERSISTANT SPERM GRANULOMAS P: CONSULT W/ DVM, CONFIRMED NO Tx INDICATED. CTM ON MH. CONSIDER KETOPROFEN IF ANIMAL APPEARS PAINFUL.	
6/28/19	15.5					[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2-20-19		G	G	CC	SO: BAR, (D), RE: AAR: Sperm granulomas possible open; no signs of open granulomas – fur is clean and dry. Animal reports a aggressive towards trainer. Animal is full chinese Rhesus and is an aggressive animal. Acting normal at observation. Scheduled sedation on 2/25/19, areas to be checked. A: Normal stable animal. No tx needed. P: CTM on routine. Await 2-25-19 sedation.	[redacted]
2/22/19	15.9					

PHYSICAL EXAM

Date 2/25/19 Weight 16.00 BCS 4.0

HR 168 RR 42 TEMP 101.6 ☐ Project Code ☐ Shave Tattoo

1. Integument sperm granuloma & pick lesions, see comment
2. Oral Cavity mild plaque, polished
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL, chronic sperm granulomas
12. Rectal Palpation NE

Animal may be unpaired or individually housed while receiving veterinary care

SO: Received sedated. (D) sperm granuloma open w/ opaque drainage – collected impression smear. R sperm granuloma closed, 1x1.5x2 firm sc swelling. Pink tissue at drainage sites is scar tissue, not erythema. Axillary & inguinal dermatitis resolved. Pinpoint lesions observed on chest & upper R arm – notified behavior of potential pick lesions

A: Persistent bilateral sperm granulomas w/ intermittent drainage

P: CTM on routine MHO, no tx needed for sperm granulomas.

[redacted]

2/25/19

WT: 16.00

1.6 MLS KETAMINE IM, BLED ____ MLS, ROOM ROUND UP

TB TEST LEFT EYE 24HR-✓- 48HR-✓- 72HR-✓-, ANIMAL MONITORED UNTIL RECOVERED

[redacted]

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/22/19		?	G	[redacted]	SD: AAR Re: no access to water suspected since 1/21/19 per area animal tech. Animal brought over to H011602 for obs'd. appears BAR, eyes wnl, noted pelleted stool in cage pan. Collected 0.3ml bld by arm pull nova results pH 7.42, HCT 42, Na+ 432 K+ 4.32, Cl- 108.10, Glu 101, Bun 23 Creat 1.3. A: wnl nova. P: per DVM animal returned to home cage w/ full water access.	[redacted]
1/25/19	17.0					[redacted]
2/8/19	16.8					[redacted]

PHYSICAL EXAM

Date 2.8.19 Weight 16.76 BCS 4.5

HR 144 RR 24 TEMP 100.8

☐ Project Code

☒ Shave Tattoo

1. Integument mild erythema axillary inguinal
2. Oral Cavity taylor 4
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal normal ROM
6. Thorax Auscultation WNL
7. Abdominal Palpation difficult, obese, WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital (R) side old sperm granuloma, scarring
12. Rectal Palpation —

Animal may be unpaired or individually housed while receiving veterinary care

so sedated, old scarring sperm granuloma on (R) side, no discharge, erythema, piloerect skin clean ⊖, (R) side small scar from old sperm granuloma no d/c, almost healed

A: Obese animal w/ mild dermatitis + old sperm granuloma (healing)

P: Chem for decreased chow % removed from testing

Male rhesus animal move around in cage b/ + mild dermatitis due to obesity [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/2/19					S: mildly moist, sl. inflammed	
					A: Intermittent sperm granuloma	
					P: Allow time for sperm granulomas	
					to slowly heal. CTM, clean PRN	[redacted]
					Consider steroid tx (inj) to ↓ inf. PRN	[redacted]
1/3/19		G	G	N	SD: BAR ORM: (L) + (R) sperm granuloma; both sites	
					appear C+D w/ mild erythema. No moisture noted.	
					Animal active, NEPD, no scratching observed.	[redacted]
1/4/19					SD: BAR, OPD: R/L Sperm Granulomas	
					(L) sperm granuloma ~2mm C+D, w/scarring	
					almost resolved. (R) sperm granuloma C+D	
					w/mild erythema ~0.5cm w/scarring	
					almost resolved, NEPD	
					A: Resolving sperm granulomas by	
					2' INT	
					P: Decrease VIS ↓'s to 1x/week	
					per DVM CTM on OPM/MH	[redacted]
1/7/19					A/P: See 1/4	[redacted]
1/11/19		G	G	N	SD: BAR OPM: R/L sperm granuloma	
					inguinal areas clean/dry	
					w/no visible erythema.	
					A: Resolved sperm granulomas	
					P: d/c from OP. CTM w/ MH	[redacted]
					D/C Snomed Recharge	
1/11/19	17.0					[redacted]

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Animal ID# [redacted]

California National Primate Research Center

Page # 2

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/14/18	16.70					[redacted]
12/31/18		G	G	N	SO: BAR AAx: sperm granuloma ; small sperm granulomas at R & L vasectomy site, R-vasectomy site is C+D, no discharge, L-vasectomy site has mild purulent discharge, mild erythemas, per NRL02 staff animal exhibits signs of mild discomfort A: persistent sperm granulomas P: start meloxicam orally, vet assess long term treatment plan, per project staff would like to discuss surgical repair or other options, vis ✓ daily	[redacted]

MMU 46128 EX141- 6 M
7yrs 10mos 16.70kg NRL02

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 3 Days

Admit ⊗ Prob. Sheet ⊗

1/1/19		G	G	N	SO: BAR, OPM: R/L inguinal sperm granulomas. (R) inguinal sperm granuloma C+D w/scabbing and mild erythema, no d/c. (L) inguinal sperm granuloma ~5mm in diameter moist weeping w/ yellow d/c suspect sperm. No piercing, ate treats. NEPD.	[redacted]
1/2/19		G	G	N	SO BAR OPM (L) & (R) inguinal sperm granulomas, had intermittently weeping. Animal was paired w/ female quickly post vasectomy, why doesn't allow the one to heal as thoroughly/completely as sometimes needed? Vet staff consensus (discussed 2X's in rounds) resections are seldom effective. Noted 2 fistulas today 1 dry & closed ~2 mm² & 1 was ~ 6 mm²	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] M
7yrs 9mos 16.50kg NRL02

Fiber Inulin
2.00 chw/animal Dose — 2. Chew Total Dose

2.00 Chew Volume — PO Rte — SID Freq — 7 Days
Start 11-20-2018 — End 11-26-2018

RLS C-114227 Ins20NOV@11:41 Prn20NOV@13:37

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
11-2018					SO: BAR RE: AAR: Firm stool, decreased interest in testing and treats: Animal PASSED small amount of soft stool at observation. took (2) fiber bites and ate them. No signs of pain or discomfort. A: firm stool P: admit to op per DVM and start on fiber inulin Dots.	
					Admit ✪ Prob. Sheet ✪	
11/23/18		G	G	N	SO: BAR (P) OPM: Firm stool. Noted normal stool in pan.	[redacted]
11/24/18		G	G	N	SO: BAR (P) OPM: Firm stool; Observed animal produce stool of normal consistency, NEPD. A: Normal stool on tx. P: ctm on MH, assess to d/c from opm @ tx end (11/26/18).	[redacted]
(1) 11-27-18		G	G	W	SO: BAR. (P) op firm stool: Animal produced normal stool at observation. NEPD. Amount normal. A: Normal stool. P: ctm on OP!	[redacted]
11-26-18		G	G	W	SO: BAR. OP: firm stool: Stool has normalized. Animal active with NEPD. A: firm stool resolved. P: D/C from opm, ctm on MH	
					✪ D/C ✪ Snomed ✪ Recharge	
11/30/18					6-20	[redacted]

(1) L.E. [redacted] 11-26-18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/19/18	16.50					[redacted]
10/25/18		G	G	SS/N	SO: BAR (P) RE: soft stool, gasey, one pile off	
					semi-soft stool + the rest were normal.	
					Took treats offered. No tail straining on MMV	
					or pairmates rump. Some squished old stool	
					on hammock in enclosure. A: 1st report of	
					abnormal stool. P: No tx @ this time,	
					CTM on MH.	[redacted]
11.1.18		G	G	N	SO: BAR (P) RE: "popped sperm granuloma". The	
					granuloma site has mild dried blood around	
					the area.	
					A: irritated sperm granuloma. (L)	
					P: Consult SR. vet @ vet rounds and	
					determine if alternate txmt can be	
					done.	[redacted]
11/2/18	16.5	G	G			[redacted]
11-8-18		G	G	CC	SO: BAR (P) RE: Inguinal red crusty; Animal	
					has scar tissue from sperm granuloma.	
					No blood or signs of trauma or infection.	
					A: red granuloma scar: No tx needed.	
					P: CTM on M.H.	[redacted]
11-9-18		G	G	CC	SO: BAR (P) RE: Inguinal red crusty: scar	
					tissue look the same as 11-8-18. No	
					new trauma noted. A: red granuloma scar.	
					No tx needed. P: CTM on M.H.	[redacted]
11/16/18	16 SO					[redacted]

① R.E. A.H. on wrong line. [redacted] 11-8-18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/5/18		G	G	N	SO: BAR OPM (D) sperm granuloma (P) irg region is C&D noted discolored area ~1cm x 0.4cm healing well by 2nd int A: balat. sperm granulomas w/ intermittent re-opening (due to breeding, paired w/ female) P: D/C to LTOP as no tx is indicated & it may take up to a year to fully resolve especially when paired w/ a female AI-SO monitored by animal care staff on MH	[redacted]
					~~D/C~~ ~~Snomed~~ ~~Recharge~~	[redacted]
10/6/18					SO: BAR (P). MMU [redacted] & MMU [redacted] escaped enclosure. No trauma visualized to digits, limbs, body, or face. A: N&PD P: CTM on routine MH.	[redacted]
10/8/18		F	G	N	SO: BAR (P) OPM: (D) sperm granuloma. Re: Poor App (lo chow). No chew in cage ate treats and scratch. Very active with cage mate stable sperm granulomas C&D w/ mild erythema. (R) sperm granuloma ~2mm pustule w/ yellow filled. A: Stable sperm granulomas, fair appetite P: CTM on MH, CTM on LTOP sperm granuloma.	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 17

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/25/18	cont				granuloma (R) w/mild scarring no change NEPD.	
					A: decreasing (R) brow abrasion healing by 2° INT (L) sperm granuloma stable.	[redacted]
					Animal #: [redacted] Room#: [redacted]	
① 9/21/18	16.2					
						[redacted]
9/28/18		G	G	N	SO: BAR, OPM: (L) sperm granuloma. (2) raised pustules on (L) sperm granuloma (L) inguinal area. Pustules CAD w/sperm filled, no d/c, moderate erythema at skin edges. A: (2) pustules with no deficit at (L) inguinal sperm granuloma - stable P: CTM on OPM/MH, Clean and treat PRN with lab staff.	[redacted]
9/28/18 ②						[redacted]
10/2/18					A/P: See 9/25, suspect 9/28 lesions sperm accumulation	[redacted]
10/5/18	16.22					[redacted]
10/6/18		G	G	N	SO: BAR OPM: (L) sperm gran. Active & moving well. Area appears CAD w/ noted pigmented skin (dark) @ granuloma site. A: Healed granuloma site, P: CTM on OPM + MH, CAT PRN.	[redacted]

① Late entry [redacted] 9.27.18 ② 66 [redacted] 10/2/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/21/18					SO: Presented case in vet rounds.	
					Consensus was that resection of fistula	
					seldom is effective (most effective is	
					#1 vasectomy prior to puberty & #2	
					if after puberty prevent breeding for	
					2+ mo post op). Usually sperm	
					granulomas can take 1 mo - yrs to resolve	
					depending on the amount of breeding	
					(↑ breeding, ↑ time to resolution)	
					A: (D) & (R) sperm granulomas P: CTM	
					~3X's/WK C&T PRN	[redacted]
9/24/18		G	G	N	SO: BAR (P), OPM: (D) sperm granuloma.	
					(R) brow abrasion C&D pinpoint decreasing	
					in size w/fibrosis. (D) sperm granuloma	
					C&D, no d/c, moderate erythema → mild	
					no picking. NEBO.	
					A: (R) brow abrasion and (D) sperm	
					granuloma healing by 2° INT	
					P: See 9/21 per DVM	[redacted]
9/25/18					A: Sperm granulomas, stable	
					P: Vis ✓ 1x/wk, if no changes	
					in next 2 weeks, then assess	
					for D/C to TOP. Opportunistically	
					clean w/ sedation, consider bx if	[redacted]
					any signs of infection or discomfort	
9/26/18		G	G	N	SO: BAR (P), OPM: (D) sperm granuloma.	
					(R) brow/head skin abrasion pinpoint decreasing	
					C&D. No treatment needed at this time. (D) sperm	

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Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/20/18					1st noted on 6/12/18 - cytology confirmed	
					(R) sperm gran. noted 8/7/18 A: Bilat sperm gran	
					P: CTM, Place on OP, CTM MWF, C&T PRN	
					Discuss w/ NRL staff (animal) to	
					present for cleaning/eval of inguinal	
					region consider resection of the area	
					Present clin rounds 9/21/18	[redacted]
					Admit ☒ Prob. Sheet ☒	[redacted]
① 9/19/18		G	G	N	S: BAR (P), PC: AAR: Minor linear	
					abrasion on top of head behind (R)	
					brow ~3mm abrasion to top of head	
					behind (R) brow C&D, no picking.	
					NEPD.	
					A: Minor lesion on head. healing	
					by 2° INT	
					P: CTM on MWF, no tx needed at this time	[redacted]
9/21/18		G	G	N	S: BAR, OPM. (L) sperm granuloma. (R)	
					Brow abrasion C&D. (L) sperm gran.	
					C&D, no d/c, w/ scarring at	
					site. No picking. NEPD.	
					A: Stable (L) sperm granuloma	
					no d/c	
					P: CTM on OPM see 9/20	
					per DVM	[redacted]

① LE [redacted] 9/19/18

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Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/10/18	cont				P-CTM on QPM vis ↓ 2x/week	
					await, sedated re check per project	[redacted]
8/10/18	16.1				SO: Delivered sedated for pre-project echo. R vasectomy site	[redacted]
					has mild erythema, no drainage. L vasectomy site mild-mod	
					erythema w/ thickening (~1cm³). No drainage. A: Sperm	
					granuloma at L vasectomy site, resolved vasocutaneous fistula	
					R vasectomy site. No treatment indicated at this time.	
					Condition is stable, will likely remain w/ this appearance	
					chronically. P: OK to d/c from OP, GM via routine MH.	[redacted]

Cardiologist-guided echocardiogram performed due to:

pre-shipment / pre-project / clinical

Preliminary Results:

Normal / LVH / Suspect (await final results)

Comments: Final Echo Result: **LVH Positive**

8/10/18					SO3: Per DVM admit to	
					LTOP. CTM on LTP and MH	[redacted]
8/10/18						
—					⊗ D/C ⊗ Snomed ⊗ Recharge	[redacted]
8/24/18	16.1					

8/31/18 MMU [redacted] BOX LOAD INTO TRANSPORT TRUCK W/O 2722

WT:

8/31/18					SO: Transported to [redacted] for MRI, project NRL02	
					WO# 2722. Sedated with ketamine 1.7 mls,	
					Animal was / was not placed in Steriotax,	
					performed MRI per protocol, recovered fully,	
					returned to CNPRC home cage	
					Animal did/did not receive Ketoprofen IM, 0.8 mls IM	[redacted]

Gave 0.35 Dex Med/Atip. to achieve four sedation for gas anesth. prep.

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DC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/7/18		G	G	N	SO: BAR Obs. bilate ing. sperm	
					granulomas the L/A is smaller but	
					more erythematous & raised	
					the R side is larger but flat & only	
					slight erythematous P: Bilat. sperm	
					granulomas that are slow to	
					heal due to intermittent drainage	
					P: Coordinate eval 8/10 when	
					animal is scheduled for pelvic	
					eval C+T PRN Eval for resection	[redacted]
8/8/18		G	G	N	SO: BAR, OPM: R/L Sperm granuloma	
					Re: Inguinal trauma. R/L Sperm	
					granuloma's: C+D, no d/c, mild erythema	
					at R/L inguinal ~1cm each.	
					A: R/L sperm granuloma - stable	
					P: See 8/7 per DVM	[redacted]
8/9/18		G	G	N	SO: BAR, Re: Inguinal Trauma unchanged.	
					R/L sperm granuloma unchanged	
					from 8/8. C+D.	
					A/P: See 8/7 per DVM	[redacted]
8/10/18		G	G	N	SO: BAR, OPM: Sperm Granuloma R/L sides.	
					Re: Inguinal trauma unchanged. (P) Animal	
					has ~1cm in diameter (D) original sperm granuloma	
					C+D, no d/c, very mild erythema and	
					scaring. (P) inguinal sperm granuloma ~2mm	
					C+D w/ mild erythema.	
					A: R/L inguinal sperm granuloma slow resolving	
					by 2° INT - NEPD.	

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Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/28/18		G	G	N	SO: OPM: Sperm granuloma/Ate rubber from joystick.	
					MMU BAR (P), active & moving well. Noted normal	
					stool in pan & cage. No rubber piece(s) seen.	
					MMU eating well & readily took & ate treats.	
					Sperm. gran. site appears CDI.	[redacted]
7-29-18		G	G	N	SO: BAR OP: Sperm granuloma/Ate rubber	
					Joy stick: Normal stool noted in cage.	
					Animal is Active with NEPD. Gran. site	
					CDI.	[redacted]
7/31/18					CT SCAN NALGA ☒	[redacted]
7/ 31/18 MMU [redacted] 1.0 MLS TELAZOL IM W.O._____						
WT: CAGE TIME 9:00 15MIN _ 30MIN _ 45MIN 2 1HR 2 1.25HR 2 1.5HR 3 1.75HR _ 2HR _						[redacted]
① 7/30/18		G	G	N	SO: BAR (P), OPM: Sperm Granuloma/	
					Ate rubber joystick. ~2cm diameter	
					sperm granuloma moderate erythema. GAB	
					no d/c. No picking. Moving well. No parts	
					at joy stick. NEPD.	
					A: NEPD, resolving sperm granuloma 2° IAT	
					P: CTM on OPM 1x/week	[redacted]
7/31/18		G	G	N	SO: BAR (P) OPM: Sperm Granuloma/Ate rubber	
					joystick. No changes from 7/30. No	
					stool. Clean cage. NEPD.	
					A/P: See 7/30	[redacted]
8/1/18		G	G	N	SO: BAR (P) OPM: Sperm granuloma. Sperm	
					granuloma has moderate erythema (L)	
					inguinal freshened lesion at sperm granuloma	
					no picking. NEPD.	
					A: freshened (L) inguinal Sperm granuloma	

① LF [redacted] 7/31/18

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Animal ID# [redacted]

California National Primate Research Center

Page # 9

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
7/24/18		G	G	N	SO: BAR, (P), OPM: (D) inguinal Sperm Granuloma	
					Animal has ~1cm (D) inguinal sperm	
					granuloma wound in C+D w/moderate	
					erythema. No discharge, no scabbing	
					or crusting at wound. Skin edges ok/tag.	
					Ate treats, No picking, NEPD.	
					A/P: See 7/23	[redacted]
7/26/18		G	G	N	SO: BAR (P) AAR: Animal ate a piece	
					of rubber off testing joystick	
					→ measuring fold, 4cm x 8cm x 0.2cm,	
					very flexible material. Unable to	
					locate in or around cage,	
					did not see in profile of cheek	
					pouch → possible ingestion. Offered	
					2 pieces of bread to facilitate	
					passing in case ingested. Sperm Gran. Stable	
					A: Possible ingestion of rubber piece	
					P: VAWD daily then early	
					AM wk to monitor for	
					changes. FS remedy UNL,	[redacted]
					Ain't to include chicks	[redacted]
7/27/18 154						[redacted]
7/27/18		G	G	N	SO: BAR OP: foreign object ingestion, granuloma; animal	
					is bright and interactive, animal was unwilling to stand,	
					unable to visualize sperm granuloma site, no rubber	
					seen in feces, NEPD, no sign of obstruction. P: monitor	
					daily through 7/31 for evidence of obstruction, vis ✓	
					1x/week for granuloma	[redacted]

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Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/14/18		G	G	N	SO: Re: Inguinal trauma. MMU BAR (P) moving well, active. (L) side sperm granuloma appears CTD w/ noted draining tract, no d/c @ time of observation. A: Sperm granuloma healing by 2 int. P: CTM on OP MH.	[redacted]
7/16/18		G	G	N	SO: BAR, Re: (L) inguinal crusty Red. Dinguinal lac. skin edges adhered w/ moderate erythema ~1cm. Nodule (possible abscess at (R) of lac. ~2mm x 2mm in diameter. No d/c. No scratching - NEPD. Training in progress. A: Sperm granuloma healing by 2° IAT w/ possible abscess P: CTM on OPM/MH	[redacted]
7/20/18		G	G	N	SO: BAR (P) OPM: (L) sperm granuloma, no drainage, 2mm wound w/ mild local erythema, no swelling A: sperm granuloma slow to heal due to intermittent drainage P: VS ✓ H/wk until healed	[redacted]
7/23/18					A: Sperm granuloma w/ intermittent accumulation of sperm / draining. P: VS 1x/wk, no tx needed unless animal is attending to the lesion. Updated project staff, consider cleaning if animal is selected for project	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/20/18		G	G	N	SO: BAR (P) OPM: Sperm granuloma, static	
					erythema, no discharge, 3mm scab	
					present.	
					A: Sperm granuloma	
					P: VB ✓ 1x/wk until heals	[redacted]
					over	[redacted]
6/29/18	15.70					[redacted]
6/29/18		G	G	N	SO: BAR (P). OPM: sperm granuloma. L ing ~5 × 3 mm	
					dry scab. no discharge. minimal erythema noted.	
					A: sperm granuloma healing well at this time.	
					P: CTM vis ✓ 1 x/wk until healed.	[redacted]
7/6/18		G	G	N	SO: BAR. (P). OPM: sperm granuloma. L ing ~5 mm diam	
					area of erythema, skin dry + intact, no swelling noted	
					A: sperm granuloma likely resolved.	
					P: CTM vis ✓ 1x/wk, assess to d/c next wk.	[redacted]
7/12/18					SO: MAR: White bulge protruding from previous	
					sperm granuloma site. Noted swelling (moderate)	
					~ 1cm² x 0.5cm (protrusion). Area appear CDI w/ NEPD.	
					A: Sperm granuloma protrusion. P: CTM on OP +	
					MH.	[redacted]
7/13/18	15.7					[redacted]
7/13/18		G	G	N	SO: BAR. OPM: sperm granuloma. L ing sperm	
					granuloma ruptured, open 4 mm lesion w/ mild	
					erythema, swelling much improved since 7/12/18.	
					A: Draining L ing sperm granuloma, healing by 2° int.	
					P: CTM vis ✓ weekly, consider flushing if animal	
					sedated for other reason, NEPD + no tx needed	
					at this time.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 6.

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
					A: (L) inguinal lesion, suspect suture rxn from vasectomy.	
					P: Sedate tomorrow and assess.	[redacted]
6/13/18					MMU [redacted] LOC [redacted] 1.7 MLS KET IM D-71310 W.O. 1527	
					WT: 16.08 CAGE TIME 140 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	[redacted]

PHYSICAL EXAM

Date 6·13·18 Weight 16.08 BCS 3

HR 180 RR 36 TEMP ——

☐ Project Code

☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity Mild tartar
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital Sperm granuloma confirmed by cytology
12. Rectal Palpation N/A

Animal may be unpaired or individually housed while receiving veterinary care

SO: Received animal sedated. Performed PE. There is a 20mm diameter wound located @ the left vasectomy side. A wet mount slide and impression smears were made. The whiteish material removed with forceps. Cytology revealed live, motile sperm and RBC's. Definitive diagnosis of sperm granuloma. Flushed wound w/ DNS. Currently on cefazolin (6·16·18) & keto (6·14·18)

					A: Sperm granuloma	
					P: CTM on OP 2x/week, continue meds.	[redacted]
6/14/18		G	G	N	SO: BAR (P) OPM: Sperm granuloma. (L) inguinal region/granuloma appears CHO, no swelling or d/c noted. A: Healing granuloma, NEPD.	
					P: CTM on OP daily.	[redacted]
6/15/18		F	G	N	SO: BAR OPM: Sperm granuloma, 4mm wound, 3mm margin of erythema, no drainage	
					A: Improving sperm granuloma	[redacted]
					P: VIS V 1x/wk, allow to heal as scheduled	

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
3-14-18		G	G	N	SO: BAR RS: Poor App - above 10; only 3 chow	
					in cage at observation. Also ate all forage.	
					A: Good Appetite - Stable Animal	
					P: Ctrm.	[redacted]
3/23/18	14.70					[redacted]
4/6/18	MMU [redacted] 1.5 ML KETIM, BLED SB, ROOM ROUND UP TB TEST L EYE 24HR__/__ 48HR__/__ 72HR__/ WT: 14.72 CAGE TIME: 8:25 15MIN 1 30MIN 2 45MIN 3 1HR__ 75MIN__ 1.5HR__ 1.75MIN__ 2HR__					[redacted]
4/20/18	15.02					[redacted]
5/4/18	16.18					[redacted]
5/11/18	15.72				SEDATED w/ 0.8 ml KETAMINE, 0.3 ml DEXMEDETOMIDINE	
					PLE w/ DRAW 1253 ASSESSED BODY CONDITION (3.5) WEIGHED	
					AND MONITORED THROUGH RECOVERY FROM SEDATION AFTER	
					ADMINISTERING 0.3 ml ATIPAMEZOLE	[redacted]
5/18/18	16.16					[redacted]
6/6/18					moved to [redacted] per move 18-330	[redacted]
6-12-18		G	G	N	SO: BAR AAR: dime size lesion on L leg;	
					Animal has a lesion ≈ 1cm round with	
					wet center. Possible ruptured abscess.	
					NO erythema or swelling present. Animal is	
					using Leg WNL. A: Lesion (L) Inguinal	
					minor - mod. P: Dis ✓ Daily for 3 days	
					then 1x wk if improves. Start ketoprofen	
					and cefazolin.	
					Admit ☒ Prob. Sheet ☒	
						[redacted]
6-12-18					SO_2 BAR, visualized lesion. Lesion is as described	
					and is at location of vasectomy of (L) inguinal.	

MMU [redacted] M
7yrs 3mos 16.16kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 81 mg Total Dose
0.80 mLs Volume — IM Rte — SID Freq — 3 Days
Start 06-12-2018 End 06-14-2018

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 404 mg Total Dose
1.20 mLs Volume — IM Rte — BID Freq — 5 Days
Start 06-12-2018 End 06-16-2018

VLF C-105922 Ins12JUN15:47 Prn12JUN15:47

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

MMU
Animal ID# [redacted]

California National Primate Research Center

Page # 4

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12-19-17		G	G	CC	SO: BAR- OP: Vasectomy: Sts CDI (x2) - mild swelling and bruising present at sx sites. Animal is Active with NEPD. A: Stable post sx. P: CTM	[redacted]
12/20/17		G	G	N	SO: BAR, Sts CDI w mild bruising PS = Φ	[redacted]
12/21/17			P	CC	moved → [redacted] per move # 17-816	[redacted]
12/21/17		G	G	CC	SO: BAR, sts CDI w/mild erythema (OPM: Vasectomy) at incision site moving well throughout cage no scratching observed, no picking observed. A: stable vasectomy P: CTM on OPM	[redacted]
12/22/17		G	G	CC	SO: BAR OPM: Vasectomy. Incisions appear CDI w/ mild erythema noted. A: Healing vasectomy incision. P: CTM on OP.	[redacted]
12/23/17		G	G	N	SO: BAR, OPM: Vasectomy. Incision CDI. Moving well throughout cage A: Healing vasectomy P: CTM on OPM	[redacted]
12/24/17		G	G	N	SO: BAR OPM: Vasectomy. Incisions appear CDI. A: Healing / healed incisions. P: D/C from OP, CTM on MM.	[redacted]
D/C						
1/4/18	14.14					[redacted]
2-6-18	13.80				BX WT	
2/14/18					moved → [redacted] per Mo # 18-100	
3/9/18	14.50					

DEE wrong boy [redacted] 12/21/17

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/17/17	12.88				14u ket, bled 10ml → [redacted] per WO# 2213.	[redacted]
7/17/17					Pre/post sedated, gave 0.3 ml Dexmed/Atip IM. Obtained dental impressions obtained	[redacted]
					ANIMAL MONITORED UNTIL RECOVERED DB	
9-6-17	13.22				Box wt	[redacted]
					[redacted] [redacted] 9/28/2017 13 mls Ket. BCS=13 Tartar: 0 (1) 2 3 4 Teeth Scaled (Y) N TB Test: (R) L Eye 24hr — 48hr — 72hr —	
					ANIMAL MONITORED UNTIL RECOVERED moved → [redacted] MU# 17-613	[redacted]
11/29/17	13.97				Box wt	[redacted]
12/5/17					moved to [redacted]	
12/6/17		G	G	N	SO: BAR-AAR: (L) brow bleeding. Noted minor abrasion(s) to mid + Left brow. Sm. amount of dry blood noted. A: Minor abrasions, healing by 2° int. No tx needed at this time. P: CTM on MH.	[redacted]
12/8/17					moved → [redacted] per WO # 4118.	
12/18/17					MMU [redacted] [redacted] NRL02 1.4 KET IM, W.O.# 4118 → SURGERY	[redacted]

WT: 13.88 CAGE TIME_____ 15MIN 30MIN 45MIN 1HR 1.25HR 1.5HR 1.75HR 2HR

12/18/17 | | | |

MMU [redacted] 3 M

6yrs 10mos 13.97kg NRL02

Buprenorphine .3 mg/mL

0.03 mg/kg Dose — .42 mg Total Dose

1.40 mLs Volume — IM Rte — SID Freq — 1 Days

Start 12-18-2017 — End 12-18-2017

Dose Ovrd. | sx tech [illegible] mg Dose — Total Dose

0.70 mLs Volume — IM Rte — SID Freq — 3 Days

Start 12-18-2017 — End 12-20-2017

DATE: 12/18/17

SO: Animal was delivered sedated to [redacted] prep. Gave 0.3 ml Dexm/Atip IM. The caudal abdomen & inguinal area were clipped and surgically prepped. SP02 was monitored throughout the procedure. See procedure report for details.

A: Vasectomy

P: Visually check inguinal incisions daily via routine hospital morning health. Start RX

[redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Obs Form 12-10-2011

100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Physical Exam Certificate
California National Primate Research Center

Animal number: MMW [redacted] Location: [redacted] Date of exam: 12/9/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL03

Negative TB Test Date: 12/9/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: 8.30 Temp: 99.9 HR: 100 RR: 40 BCS: 4.5 Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	Clear
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	sperm granuloma sites - cleaned and TAO

Other: Gave 0.3 mL DexMed / ATIP IM Placed (+) site no. 28, defect

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: vasectomy - (12/17) persistent sperm granuloma - present

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - NR; Chem - NR

Imaging studies: (to be completed by Veterinary staff)

Date: 11/4/20 Radiographs: U/S exam: Echo

Comments: Mild LVH Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

- ___ Approved for project
- ___ Approved for project pending lab review
- X Approved for shipment
- ___ Stable weanling
- ___ Other

Comments:

Examining Veterinarian: [redacted] Date: 12/11/20

Original– Animal's record Bottom copy - Requestor [redacted] (+) RC [redacted] PC17 Rev. 1/14/14

3847

☐ VIRAL PRECAUTION

BZ59 , NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

12,9,20
DATE OF SAMPLE

M 9 YR 9 MO 18.1 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

pre-shipment

HOSPITALIZED NO ☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☐ ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	146	mM/L	15		CPK (S,HP)	1232	U/L	25		pH		
2		POTASSIUM (S,HP)	3.5	mM/L	16		ALK PHOS (S,HP)	87	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	115	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	379	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	18		19		CHOLESTEROL (S,HP)	112	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.8	mg/dl	20		TRIGLYCERIDE (S,HP)	112	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.9	mg/dl	21		BILI TOTAL (S,HP)	0.1	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	68	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.9	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.3	g/dl										
13		ALT (S,HP)	77	U/L										
14		AST (S,HP)	42	U/L										

REPORTED BY [redacted] DATE: 12/20/20

PERFORMED BY: CNPRC X VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Animal Number:	Charge ID:	Work Order:	Filled Out By (first name & last initial):	Procedure:
mmu [redacted]	BZ59			Sperm granulomas Tx / monitoring
Date Range: 12/1-	Project Code: NRL03	[redacted]	Requester: [redacted]	

TX/Day (BID/TID)	CODE:	QTY
Baytril 5mg/kg IM	BAY5-BID/day	
Baytril 10mg/kg IM	BAY10-BID/day	
Buprenex/Buprenorphine IM	BUP/day	
Cefazolin IM	CEF/day	
Celebrex	Cele/day	
Cephalexin PO	CEP/day	
Clindamycin	Clinda/day	
Doxycycline SUSPENSION	DOX/day	
Famotidine/Pepcid	Famo/inj/day	
Haldol/Haloperidol	HAL/day	
Hydromorphone IM	HydroM/day	
Keppra/Levetiracetam PO	KepL/day	
keppra/Levetiracetam Injectable	Kep-I/day	
Midazolam 1mg/kg	MID1/day	
Midazolam 5mg/kg	MID5/day	
Mucinex	Mucx/day	
Prednisone	Pred20/day	
Valium/Diazepam Injectable	VAL-I/day	
Valium/Diazepam Tablet	VAL-T/day	

TX SUPPLY (Given by SRA)	CODE:	QTY
Baytril 5mg/kg	BAY5/sply	
Cephalexin Suspension	CEP/sply	
Cymbalta/Dulox	DULOX/sply	
Flagyl TAB	FLA/sply	
Gabapentin	GAB/sply	
Lantus (Insulin)	LAN/sply	
Prednisone	Pred20/sply	
Pregabalin/Lyrica	LYR/sply	
Valium/Diazepam Inj	VAL/sply	
Valium/Diazepam TAB	VAL-T/sply	

LABOR (Hourly)	CODE:	Total (hrs):
AHT (O.T)	AHT	
AHT Regular time \\	AHT	
Veterinarian \\\	VET	

PPE COMPOSITES	CODE:	QTY
PPE (STANDARD)	NIPC	
PPE (NON-STANDARD)	NS/PPE	

TX/dose (SID)	CODE:	QTY
Azithromycin SUSPENSION	AZI/-Odose	
Azithromycin TABLET	AZI-T/dose	
Baytril 5mg/kg	BAY5-SID/dose	
Ceftriaxone/CCFA-Excede	CCFA/dose	
Cerenia/Maropitant Inj	CER-inj/dose	
Cerenia/Maropitant PO	CER-T/dose	
Dexmethasone	Dex-Inj/dose	
Duloxetine/Cymbalta	DULOX/dose	
Flagyl/Metronidazole Inj	FLA-I/dose	
Flagyl/Metronidazole PO	FLA-T/dose	
Gabapentin	GAB/dose	
Iron Dextran Inj	IDI/dose	
Ketoprofen	KETO/dose	
[illegible]	MEL-I/dose	
Meloxicam SUSPENSION	MEL/POdose	15
Metamucil	MET/dose	
Metoclopramide/Reglan	METO/dose	
Odansetron	OND/dose	
Omeprazole	OMEP/dose	
Penicillin/Dual Pen	PPG/dose	
Pioglitazone	PIO/dose	
Pregabalin/Lyrica	LYR/dose	
Rocephin IM	ROC-IM/dose	
Simbadol SQ	Simba/dose	
Tylosin Inj	Tylo-inj/dose	
Tylosin Powder	Tylo-P/dose	
Tylosin TABLET	Tylo-T/dose	

month: Dec

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

month:

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

DRUGS/ml (no syr)	CODE:	QTY
Atropine	ATR	
Benadryl Inj	BEN-I	
Buprenorphine	BUP	
Cefazolin	CEF	
Cerenia	CER	
Dermoscent Essential	JOYL	
Dextrose 50%	DEXT	
Epinephrine	EPI	
Famotidine/Pepcid	FAMO/IN	
Haldol	HAL	
Heparin	HEP	
Hydromorphone	HYDROM	
KCL/Potassium	KCL	
Ketamine	KET	
Lidocaine	LID	
Nitrofurazone powder bottle	NITROF	
Ondansetron Inj	ONDI	
Ondansetron TAB	ONDT	
Phenobarbital	PHENO	
Pentobarbital (Fatal+)	PENT	
Reglan/Metoclopramide	METO	
Sodium Bicarb	BICARB	
Telazol	TEL	
Valium/Diazepam	VAL	

UCD 0452

5743

☐ VIRAL PRECAUTION

BZ59, NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMN [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

12, 9, 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]

M SEX | 9 YR 9 MO AGE | 18.1 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID_____ COLONY MANAGEMENT_____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

pre-shipment

HOSPITALIZED ☐NO ☐YES ____-____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted _____ hrs ☐ Anethetized ☐ other _____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	6.0	X 10 ^3/ µl
RBC	4.69	X 10 ^6/ µl
HEMOGLOBIN	12.4	gm/dl
HEMATOCRIT	37.8	%
MCV	81	fl
MCH	26.4	pg
MCHC	32.8	pg/fl
PLATELETS	1.85	X 10 ^5/ µl

☐ RETICULOCYTES % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 7.2 gm/dl

PLASMA COLOR:
☑ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 6.0 X 10 3 / µl
☐ CORRECTED WBC _____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	43	2580
LYMPHOCYTES	53	3180
MONOCYTES	2	120
EOSINOPHILS	2	120
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 12/9/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

928

☐ VIRAL PRECAUTION

B759, NRL02
I.D. PROJECT CODE

[redacted]
ANIMAL I.D.

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

[redacted]
INVESTIGATOR REQUESTOR

2 / 25 / 19
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M 4 YR 0 MO 16 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID: ✓ COLONY MANAGEMENT: ____ EXPERIMENTAL: ____

CLINICAL SIGNS / PROBLEMS:	PRIOR THERAPY ☑ NO ☐ YES LIST ALL AGENTS:
chronic sperm granuloma, rule out stg. infection HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE	

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted ____hrs ☐ Anesthetized ☐ Other____

PROCEDURE(S) REQUESTED: cytology + gram stain

SPECIMEN: Impression of draining tract (blood 2° to palpation, skin contamination expected)

RESULTS

Large numbers of sperm were mixed with moderate numbers of neutrophils, a few macrophages and rare multinucleate cells.

Gram stain - no significant organisms identified.

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

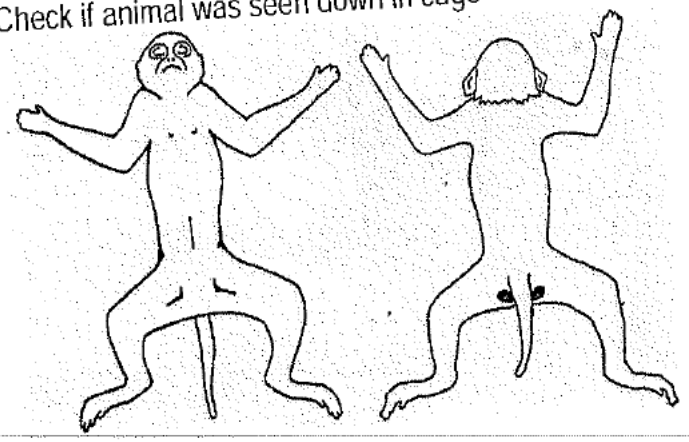
ANIMAL ASSESSMENT REQUEST

Date: 11/1/18 Time: 16:00

Animal #: [redacted] Location: [redacted]

PLEASE PAGE VET/AHT IF YOU FEEL IT IS AN EMERGENCY

☐ Check if animal was seen down in cage



OBSERVATIONS: popped sperm granuloma

☑ Check if actively bleeding [redacted]

OBSERVED BY: [redacted]

Primate Medicine Notes: ✓ animal. No txmt @ this time, discuss in vet rounds. [redacted]

☐ Admitted ☐ treated ☐ recheck Vet/AHT initial [redacted]

PC16

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU [redacted] Home Room [redacted] Date: 8/31/18
Wt (kg): 10.4 Age: 7yr Sex: M/F Procedure: MRI [redacted] ET Tube size: 6mm
Investigator: [redacted] W/O# 2222 Project: [redacted] IV Catheter Placement: Ø

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	1.7ml/5	IM	~7:45				
DexMed.	0.35ml/5	IM	~7:55				
ATP.	0.35ml/5	IM	~8am				

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N

HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP —

Time:	8am	8:15
Temp:		
160		
150		
140		
135		
130		
125	•	
120		
115		
110		
105		
100	✓	✓
95		
90		
85		
80		
75		
70		
65		
60		
55		
50		
45	X	X
40		
35		
30	O	O
25		
20		
15		
10		
SIGH		
Fluids total/rate	N/A	
CRI:	N/A	
Iso FI (%)/ Oxygen (L)	2.1%/2L	1.6%/2L

Intubated recovery @ 10am

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

PC 15

Initials [redacted]

5009

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU[redacted] Location: [redacted] Date of exam: 9/28/17

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL01 Lg Scale Brain-Machine Interface

Negative TB Test Date: 9/28/17

Physical exam findings: (to be completed by Veterinary staff)

Weight: 13.30 Temp: 100.8 HR: 180 RR: 36 BCS: 3 Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 9/28/17 Dates Reviewed: All Reviewers initials: [redacted]

Comments: NSF

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/28/17 CBC ECC CHEM U/A R/C Parasitology Reviewers initials:

Comments: CBC-[redacted]
Chem

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

[redacted] Approved for project Comments:

____ Approved for project pending lab review

____ Approved for shipment

____ Stable weanling

____ Other

Examining Veterinarian: [redacted] Date: 10/4/17

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 12/18/2017

PROCEDURE: Vasectomy - Autoligation	ROOM: [redacted]	AGE: 6y 10m
INVESTIGATOR: [redacted]	CAGE [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 4118	WT: 13.9 kg

SNOMED CODES		CODED BY:	SNOMED TERMS
Circle one : Experimental (XI) / Colony (SN)			
T-78800	P-11070	Vasectomy	

DESCRIPTION OF PROCEDURES PERFORMED

An approximately 2 cm incision was made just caudal to each inguinal ring over the spermatic cord through the skin, subcutaneous tissues and tunica vaginalis. The vas deferens were bluntly dissected free. The vas deferens were transected, and the testicular ends were tied in an autoligation knot for occlusion. 3-0 Vicryl ligatures were placed on both the testicular and prostatic ends. The tunica was closed with 3.0 Vicryl in a simple continuous pattern. The skin was closed using 3.0 Vicryl in an intradermal pattern.

	POST OPERATIVE CARE: CIRCLE BELOW
TIME IN: 915 TIME OUT: 945	BUPRENEX IM SID X 1 DAY (given peri operatively) KETOPROFEN IM SID x 3 DAYS

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

4883

☐ VIRAL PRECAUTION

I.D. / NRL01 PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted] ANIMAL I.D.

[redacted] INVESTIGATOR REQUESTOR

HEMATOLOGY

9 / 28 / 17 DATE OF SAMPLE

ANIMAL DATA: [redacted] ROOM CAGE

M SEX 6 YR AGE 7 MO 13.22 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS: Pre Project PE

HOSPITALIZED ☐ NO ☐ YES ____ ROOM - CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= / µl
CD8= / µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted 8 hrs ☒ Anesthetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.7	X 10 ^3/ µl
RBC	4.78	X 10 ^6/ µl
HEMOGLOBIN	12.5	gm/dl
HEMATOCRIT	37.1	%
MCV	78	fl
MCH	26.2	pg
MCHC	33.7	pg/fl
PLATELETS	2.10	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^6/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.4 gm/dl

PLASMA COLOR:
☐ NO ABNORMALITIES
☒ HEMOLYZED SL
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.7 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	58	3306
LYMPHOCYTES	42	2394
MONOCYTES		
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/28/17 [redacted]

9/28/17 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9-28-17

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

2414

☐ VIRAL PRECAUTION

I.D. / NRL01 PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU[redacted] ANIMAL I.D.

[redacted] INVESTIGATOR REQUESTOR

CLINICAL BIOCHEMISTRY

9 / 28 / 17 DATE OF SAMPLE

ANIMAL DAT[redacted] ROOM CAGE

M SEX 6 YR AGE 7 MO 13.22 KG WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: Pre Project PE

HOSPITALIZED NO☐ YES ☐ ____ ROOM - ____ CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☒ 8 HOURS COMMENTS:

SAMPLE: SERUM ☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☒ MOD ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	148	mM/L	15		CPK (S,HP)	1407	U/L	25		pH		
2		POTASSIUM (S,HP)	3.8	mM/L	16		ALK PHOS (S,HP)	129	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	110	mM/L	17		GGT (S,HP)	65	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	24	mM/L	18		LDH (S,HP)	347	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	18		19		CHOLESTEROL (S,HP)	109	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.4	mg/dl	20		TRIGLYCERIDE (S,HP)	46	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.9	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	66	mg/dl	24		hsCRP	0	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.8	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.8	g/dl										
13		ALT (S,HP)	33	U/L										
14		AST (S,HP)	34	U/L										

REPORTED BY [redacted] DATE: 9-28-17

PERFORMED BY: CNPRC ☑ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/11/20					Animal shipped to Neuralink	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/11/20	cont				A: Stable sperm granulomas on Tx, possible	
					relocation	
					P: Vis ✓ 2x week OPM, await possible relocation	
					Continue Meloxicam	[redacted]
12/12/20		G	G	N	SO: BAR Re: Red/crusty L ING; Sperm	
					Granuloma (R & L) CTD w/ mild Erythema.	
					NEPD	
					A/P: SEE 12/11	[redacted]
12/14/20		G	G	N	SO: BAR, P, OPM: Sperm granulomas, Re: Central	
					crusty, RL sites have some dried blood	
					with clear d/c at both sites and mild	
					erythema at RL sperm granuloma sites.	
					A: Freshened RL sperm granuloma sites	
					suspect 2° to recent moves and room	
					changes on tx	
					P: Vis ✓ 2x week OPM	
					Await Relocation	
					Continue Meloxicam	[redacted]
12/15/20		G	G	N	SO: BAR OPM Sperm granuloma	
					hyperpigment of both sides, ↓	
					moist on (R) side, ~ side ~ 7-8 mm	
					(R) side ~ 5.1 mm A: Recurrent Sperm	
					granuloma acting up due to	
					Δ's in caging & lots of movement in	
					room P: Extend meloxicam until	
					shipped to new facility ✓ 2-3x's	
					wk	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/4/20		G	G	N	SO: BAR, OPM: Sperm granulomas. R+L sites C+D w/ contracting skin edges, moderate erythema at skin edges, no d/c, no freshening of sites. Scabs removed. NEPD.	[redacted]
12/7/20		G	G	N	SO: BAR (R) OPM: Sperm granuloma R/L sperm gran sites C+D w/ mild erythema. No d/c, does not appear freshened. A: sperm granuloma sites improved w/ tx. P: CTM on OPM @ 3x/w, cont tx as planned.	[redacted]
12/8/20		G	G	N	SO: BAR OPM sperm gran (R) node is ~6 mm², (L) node is ~10-7 mm X 1.5 cm w/ a 5 mm moist crusty center A/P sce 12/7	[redacted]
① ~~12/8/20~~					__pre-project physical x pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]
12/9/20		G	G	N	SO: BAR, Rc: red crusty inguinal L side; R + L sperm granuloma sites w/ ↑ erythema. Some white d/c (sperm). NEPD. A: sperm granuloma sites mild inflammation P: CTM on OP 2x/w, cont. tx as planned	[redacted]
12.9.20	1B38				MMU [redacted] NRL03 W.O 3857 1.9 MLS KET IM / D→ 1310 / BLED 3 MLS TB TEST RIGHT EYE 24HR ✓ 48HR ✓ 72HR ✓ CAGE TIME: 2:30 15 MIN 2 30 MIN 3 45 MIN____ 60MIN____ 75MIN____ 1.5HR____ 90MIN____ 2HR____	[redacted]
12/11/20		G	G	C	SO: BAR (R) OPM: Sperm granuloma. R/L sperm granulomas C+D w/ mild erythema at sites at sites, no D/C at sites. NEPD.	

① Correct date is 12/9/20 [redacted] 12/9/20 ①

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/30/20		G	G	N	SO: BAR, OPM: Sperm granulomas. R/L sites C+D w/mild erythema at skin edges. No freshening. Both sites have yellow crusting, C+D. NEPD.	
					A: Stable sperm granulomas off Tx	
					P: Vis ✓ 3x week SPM	
					If sites are freshened or decline consider restarting meloxicam	[redacted]
12/1/20		G	G	N	SO: BAR OPM sperm granuloma - (R) side (~1cm) only but sides crusty (R) side ~1 mm	
					A: Recurrent sperm granuloma flares up again - lots going on in room lately so that's when he picks @ the sores	
					P: Meloxicam x 1 ed + Monitor response	[redacted]
					SO: Re - (R) leg sperm granuloma this am	
12/2/20					SO: Animals are switching to standard caging this week + there will be lots of noise in the room so elected to extend meloxicam until animal is s/c to be shipped to keep sperm sperm. until control	[redacted]
12/3/20		G	G	N	SO: BAR, OPM: Sperm granulomas. Rec: L crusty inguinal. (R) inguinal C+D scab removed m/ mod erythema at site, no dk, no bleeding. (L) side C+D w/ white crusting at wound, mild-moderate erythema at skin edges. No bleeding or freshening. NEPD. A/P: See 12/2 per DVM	[redacted]

MMU [redacted] M
9yrs 9mos 18.10kg NRL03
Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.8 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 6 Days
Start 12-01-2020 — End 12-06-2020

KLC C-151802 In:01DEC20 08:27 Prn:01DEC20 08:27

MMU [redacted] M
9yrs 9mos 18.10kg NRL03
Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.8 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 15 Days
Start 12-01-2020 — End 12-15-2020

Recharge

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/20/20	cont				P: See 11/17 per DVM	
					V.S. ✓ 2x week	[redacted]
11/21/20		G	G	CC	SO: BAR RE: Rx crusty Inguinal (L);	
					MILD ERYTHEMA @ L SITE. Ø D/C,	
					C+D. NEPD	
					A/P: SEE 11/20	[redacted]
11/24/20		G	G	N	SO: BAR OPM sperm granuloma. R & L sperm	
					granulomas are approxmatly 1cm w/ mild	
					erythema	
					A: stable mmu w/ chronic sperm granulom	
					P: No additional treatments is needed at this time	
					CTM ~~Rx~~ 2x/week.	[redacted]
11/26/20		G	G	N	SO: BAR, RE: crusty inguinal L side; L side lesion w/	
					mild erythema. No d/c. No attention paid to lesion	
					A/P: see 11/24	[redacted]
11/27/20		G	G	N	SO: BAR, RE: crusty ing. R side; both R + L side granuloma	
					sites have mild eryth. L has dried blood.	
					A: see 11/24	
					P: START MELOXICAM, CTM daily on OP.	[redacted]
11/28/20		G	G	N	SO: BAR (P), OPM RE: ing. red crusty; both granuloma	
					sites st. Worsened. mmu active w/ NEPD.	
					A/P: see 11/27.	[redacted]
11/29/20		G	G	N	SO: BAR, OP: sperm granuloma; R/L sites are C+D,	
					L inguinal site has very mild crusting, no D/C seen,	
					discolocation at skin edges, possibly scars, no attention	
					to area, eagerly took treats	[redacted]

MMU [redacted] M
9yrs 9mos 18.10kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.8 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 3 Days
Start 11-27-2020 End 11-29-2020

(DEA) DVS 11/24/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] M
9yrs 9mos 18.10kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.8 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 3 Days
Start 11-16-2020 End 11-18-2020

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
11/16/20	cont				visualized.	
					A: RIL sperm granulomas freshened, suspect	
					2° to room changes/moves	
					P: Extend Meloxicam	
					Notified PI	
					Vis ✓ 3x/week OPM	[redacted]
11/17/20		G	G	N	SO: BAR OPM sperm granuloma	
					C+D ~ 7-8 mm bilat no moisture	
					A: Recurrent sperm granuloma	
					acts up w/ animal picking esp. when	
					changes happen in the room. Several	
					animals incl this animal were	
					recently relocated P. Cont meloxicam	
					Re✓ the day after tx steps to see if	
					tx needs to be extended. Extend	
					meloxicam if any concerns	[redacted]
11/19/20		G	G	ca	SO: BAR, OPM: sperm granulomas. Re: Crusting.	
					RIL inguinal C+D w/scabbing and mild	
					moderate erythema at sites. NEPD	
					A/P: See 11/17 above for OPM	[redacted]
11/20/20		G	G	N	SO: BAR, OPM: Sperm granuloma. Re: Red	
					inguinal crusty (L) side. RIL sperm	
					granulomas. C+D w/mild→moderate	
					erythema at RIL sperm granuloma. Not	
					freshened. NEPD.	
					A: unconfirmed crusty sperm granuloma	
					stable.	
					P: NO Tx needed at this time	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
11/6/20	con't				P: con't: becomes moist consider restarting meloxicam.	[redacted]
11/10/20		G	G	N	SO: BAR OPM Recurrent sperm granulomas BOH sites are crusty w/ hyperpigment (D) ~ 1cm, (R) ~ 7mm. Animal was obs. picking area. A: sperm granuloma flare. P: Start meloxicam 1 per day ~~INTERCEPT~~, cont TX if not resolved by 11/13	

MMU [redacted] M
9yrs 8mos 18.60kg NRL03
Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.9 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 3 Days
Start 11-10-2020 End 11-12-2020

KLC C-150611 Ins10NOV008:29 Prn10NOV008:29

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
11/12/20		G	G	N	SO: BAR, OPM: Sperm granulomas. R/L inguinal sperm granulomas both C+D w/ scabbing, mild → moderate erythema, no d/c, appear to be decreasing in size. NEAD.	[redacted]
11/13/20		G	G	N	SO: BAR OPM sperm granulomas (D)/(R) sides mod crusting (D) side ↓. WORST A/P see 11/10	[redacted]

MMU [redacted] M
9yrs 9mos 18.60kg NRL03
Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.9 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 3 Days
Start 11-13-2020 End 11-15-2020

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
11/13/20	18.10				Box Weight	[redacted]
11/16/20		G	G	N	SO: BAR, OPM: Sperm granuloma. R/L sperm granulomas freshened ~5mm² each, scabs removed. Mild → moderate erythema at skin edges. No fresh blood at sites. Small amt ↓ d/c at (R) site. Recent moves in room animal active and aggitated. No picking	[redacted]

(1) RE [redacted] 11/10/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/27/20					A: Recurrent bilat sperm granuloma	
					P: VTS V 1/WK, if sperm granuloma	
					reactivates & becomes painful, start	
					meloxicam	[redacted]
10/30/20	17.80				Box weight	[redacted]
11/3/20		G	G	N	SO: BAR OPM sperm gran Re red/crusty	
					conj ↑erythema + crusting(ness)	
					A/P see 10/27 Re ✓11/4 to assess for	
					possible extension of tx	[redacted]
11/5/20						
						[redacted]
11:5:20	18.60				MMU [redacted] SPF01 WO 3406	
					1.8 ML KET / D→ 1302	
					CAGE TIME: 2.10	
					15MIN 2, 30MIN 3, 45MIN____ 1HR____	[redacted]
					1.25HR____, 1.5HR____, 1.75HR____, 2HR____	
11/6/20		G	G	N	SO: BAR OPM: Sperm granuloma. (2)	
					Sperm granulomas areas 2 areas	
					of approximately sperm granuloma (R) ~6 mm	
					and (L) ~5 mm. Both clean + dry, mild erythema.	
					No d/c appreciated. Readily took treat.	
					A: Recurrent bilateral sperm granuloma.	
					P: CTM on OPM 1x/wk. No need to extend	
					meloxicam today. If sperm granulomas	[redacted]

MMU [redacted] M
9yrs 8mos 17.80kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.8 mg Total Dose
1.20 mLs Volume — PO Rte — SID Freq — 3 Days
Start 11-03-2020 End 11-05-2020

Cardiologist guided echocardiogram preformed due to:
pre-shipment / pre-project / clinical / genetic
Preliminary results: (await final results)
Normal / Suspect
Comment: LVH (+) (FINAL)

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ⊕	Hydration (G, F, P) ⊕	Stool (N, SS, L, B) ⊗	Observations	Initials
10/23/20	cont				w/small amount of bloody d/c at sites. Sites are	
MMU [redacted] M 9yrs 8mos 16.80kg NRL03					~5mm² open each. Skin edges have mild	
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose 1.7 mg Total Dose					swelling and moderate erythema at	
1.10 mLs Volume PO Rte SID Freq 3 Days					skin edges.	
Start 10-23-2020 End 10-25-2020					A: Freshened bilateral R/L sperm granulomas	
					P: Per DVM restart Meloxicam	
					V/S & daily on Tx on OPM	
					Notified PI ⊗	[redacted]
10/24/20		G	G	N	SO: BAR (P) OP: Sperm Granuloma; L SITE	
					MILD/MOD ERYTHEMA W/ CRUSTED D/C. R	
					SITE C&D W/ ⊘ ERYTHEMA	[redacted]
10/25/20		G	G	N	SO: BAR (P), OPM: sperm gran.; both areas are C&D w/ no oth.	
					paid. L site ~0.75 cm², R ~0.3 cm². ⊘ d/c from sites noted,	
					both have hyperpigment. surrounding.	[redacted]
10/26/20		G	G	C	SO: BAR (P), OPM: Sperm granuloma. (P)	
MMU [redacted] M 9yrs 8mos 17.83kg NRL03					sperm granulom C&D w/fibrin in wound	
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose 1.8 mg Total Dose					bed and mild erythema at skin edges.	
1.20 mLs Volume PO Rte SID Freq 1 Days					(L) sperm granuloma ~4mm² slightly	
Start 10-26-2020 End 10-26-2020					moist w/mild→moderate erythema at skin	
					edge.	
					A: Slightly freshened sperm granuloma	
					(L) site, (P) site sperm granuloma stable	
					P: Restart Meloxicam	
					V/S & daily on OPM	
					Notified PI	[redacted]
10/27/20		G	G	N	SO: BAR (P) OPM: Sperm granuloma	
					(R) hyperpig ~7.8mm, (L) ~5mm - both	
					clean & dry	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000506

UCD 0469

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/8/20		G	G	CC	SO: BAR (P) OP: Sperm Granulomas; Both Sites	
					C+D w/ mod. Erythema @ skin edges. Fibrin	
					In wounds, ~5mm² (each wound). Not	
					Freshened	[redacted]
10/14/20		G	G	N	SO: BAR (P) OP sperm granulomas. L > R. Left side	
					is approximately ~~1cm~~ (1) 2cm² with fibrin in the wounds.	
					Right side is approximately 1cm². Both sides have	
					~~redder~~ (1) erythema but he isn't paying attention to it.	
					Both wounds are clean, dry, with no recent freshening	
					A: Stable macaque with recurrent bilateral sperm granulomas	
					P: CTM 1x/week. If sites become large & more	
					inflammed consider re-starting meloxicam.	[redacted]
10/16/20	17.83				Box Weight	[redacted]
10/17/20		G	G	CC	SO: BAR RE: Red/crusty ing; Both sites	
					are dry w/ very mild erythema. NEPD	
					A/P: see 10/14	[redacted]
10/20/20		G	G	N	SO: BAR OPM Sperm Granulomas	
					both sites are dry (L) side ~8 mm	
					(R) side 4 mm hyperpigmentation	
					A/P see 10/14	[redacted]
10/21/20		G	G	CC	SO: BAR, OPM: Sperm granuloma. RE: Crusty	
					inguinal. Bilateral RIL sperm granulomas	
					C+D w/mild erythema and no D/C	
					no freshening. NEPD.	
					A: Sperm granulomas C+D	
					P: See 10/14	[redacted]
10/23/20		G	G	N	SO: BAR, OPM: Sperm granulomas. RE: Red crusty	
					inguinal. RIL sperm granuloma sites are freshened	

Dec [redacted] 11/1/20

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
9/25/20		G	G	CC	SO: BAR, Re: red crusty inguinal, (P) both sides C+D, scabbed,	
					no swelling or erythema. No attention paid to lesions. NEPD.	[redacted]
9/30/20		G	G	N	SO: BAR, Re: crusty; R granuloma is C+D, mild	
					scabbing/crustias, L granuloma appears moist with	
					friable tissue at lesion edges, no attention to area,	
					readily ate treats	[redacted]
10/1/20		G	G	N	SO: BAR. Re: (L) inq red & crusty	
					Conf (R) sperm gran site is inflamed	
					~1cm w/ crusting & s. moisture in	
					the middle (R) side is s. crusty	
					Hx: Recurrent bilat sperm	
					granulomas - one inflamed P: BAR +	
					Meloxicam & monitor response	
					~~daily~~ (L) stop meloxicam when site	
					is healed/dry ✓ Response to	[redacted]
					tx EOD	
10/2/20		G	G	N	SO: BAR (P) RE: (L) inguinal crusty, OP:	
					sperm granuloma; (L) site moist with	
					white d/c, mild erythema (R) site moist	
					with white d/c, NEPD, readily ate	
					treats, & attn paid on obs.	
					A/P see 10/1	[redacted]
10/4/20		G	G	N	SO: BAR (P), OPM: sperm granuloma; both areas C+D,	
					& attn. paid. MMU active, NEPD. L site has white center.	[redacted]
10/5/20		G	G	N	SO: BAR, paired Re: genital red crusty; no significant	
					change from 10/4 entry	[redacted]
10/6/20		G	G	N	SO: BAR (P) OPM sperm granuloma (L) & (R)	
					C+D (L) ~4 mm hyperpigment (R) ~8 mm hyperpig	
(L) RE [redacted] 10/7/20					& crusting A/P see 10/1	[redacted]

MMU [redacted] M
9yrs 7mos 16.80kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose
1.10 mLs Volume — PO Rte — SID Freq — 6 Days
Start 10-01-2020 — End 10-06-2020

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/14/20					P. Re initiate meloxicam Rx d/ ✓ sperm granulomas @ least 3d/wk (~EOD) while on Rx	
						[redacted]
9/16/20		G	G	N	SO: BAR, (R), OPM: Sperm granuloma (R) inguinal sperm granuloma C+D ~5mm² w/mild erythema at skin edges. (L) mostly C+D ~5mm² w/mild erythema at skin edges. No picking observed. Both look improved.	[redacted]
9/18/20		G	G	N	SO: BAR (R) OP: Sperm granuloma; (L) site slightly moist post hosing, (R) site C+D scabbed. Attention paid on obs NEPO, readily ate treats	[redacted]
9/20/20		G	G	N	SO: BAR, Re: genital red crusty; both sperm granuloma sites C+D, Attn paid. NEPO A/P: See 9/14, consider restarting NSAID if areas appear freshened.	[redacted]
9/21/20		G	G	N	SO: BAR OPM sperm granuloma - C+D today (R) side ~5 mm d/ (L) side ~8 mm w/ hyperpigmentation A: Recurrent sperm granulomas P: VS ✓/wk, if sperm gran reactivates & becomes worse start meloxicam	[redacted]
9/23/20		G	G	CC	SO: BAR OP: Sperm granuloma; Both sides C+ scab, slightly moist post hosing NEPO readily ate treats	[redacted]

Animal: [redacted] M
9yrs 7mos 16.80kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 6 Days

Start 09-14-2020 End 09-19-2020

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/4/20					A: Recurrent sperm granulomas b/l at	
					Animal tends to pick @ the area of aggravate	
					when in single housing & occ	
					even in expanded housing. Animal	
					was recently paired w/ a female	
					so that also aggravated them	
					P: CTM closely ✓ ~3x's/wk for	
					the next two weeks. If any moisture	
					observed remain tuck w/ Mixicon	[redacted]
9/9/20		G	G	N	SO: BAR (P), OPM: Sperm Granuloma.	
					R/L inguinal C+D w/ crusting and	
					moderate erythema at skin edges	
					No picking, NEPD.	[redacted]
9/10/20		G	G	N	SO: BAR, (P), OPM: Sperm granuloma	
					(R) inguinal sperm granuloma moderate	
					erythema w/ slight moisture. Actively	
					grooming paintbrate. (L) inguinal sperm granuloma	
					mild erythema w/ slight d/c. No picking	
					NEPD.	
					A/P: See 9/8 per DVM	[redacted]
9/11/20		G	G	N	SO: BAR OP: Sperm granulomas; both sites are	
					thickened with discoloration, likely from	
					chronic lesion, Right side is C+D, Left side has	
					small scab, C+D, no d/c seen, no attention to	
					area	[redacted]
9/14/20		G	G	N	SO: BAR OPM Sperm Granulomas (R) side	
					is ~5-4 mm C+D, (L) side is 1 cm x 1.5 cm	
					of moist in the center A: Recurrent	
					b/l sperm granulomas	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
8/31/20					to extend tx further (esp if still singly housed)	[redacted]
MMU [redacted] 9yrs 6mos 16.80kg M NRL03						
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose, 1.7 mg Total Dose						
1.10 mLs Volume, PO Rte, SID Freq, 14 Days						[redacted]
Start 08-21-2020 End 09-03-2020						
9/3/20		G	G	N	SO: BAR (P) OPM: Sperm granuloma.	
MMU [redacted] 9yrs 6mos 16.80kg M NRL03					Re: Red crusty inguinal. R/L Sperm	
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose, 1.7 mg Total Dose					Granuloma moist w/clear-yellowish	
1.10 mLs Volume, PO Rte, SID Freq, 19 Days					D/c at R/L sperm granulomas. Good	
Start 08-21-2020 End 09-08-2020					pairing behavior. Mild-moderate	
Extended					erythema at both sperm granulomas,	
					No picking noted.	
					A: new pairing, reactivated sperm	
					granulomas w/mild inflammation	
					on tx	
					P: Extend meloxicam per DVM	
					V/S + OPM 3x/week	[redacted]
9/4/20		G	G	N	SO: BAR (P) OPM: Sperm granuloma. Re:	
					crusty inguinal. Decreased discharge	
					at inguinal. Sperm granulomas have	
					moderate erythema at skin edges.	
					R/L sperm granuloma ~5mm2 w/white	
					d/c at sperm granulomas. No picking	
					during observation	
					A/P: See 9/3 above	[redacted]
9/8/20		G	G	N	SO: BAR (P) OPM Sperm granuloma	
					(L) inde ~7mm w/ hyperpig, dry crusting	
					(R) facle ~5mm both inguinal (L/D)	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/26/20	cont				Sperm granuloma (L) w/mild erythema no d/c at (L) side.	
					A: (R) sperm granuloma freshened (L) sperm granuloma healing by 2° INT	
					P: Extend Meloxicam	
					Notified PT	
					Vis ✓ 3x/week OPM	[redacted]
8/27/20		G	G	N	SO: BAR, OPM: Sperm granuloma. Re: Red crusty inguinal (L) side. R/L inguinal sperm granulomas freshened. (R) side ~5mm² wound w/mild erythema. (L) side small amount of dried blood w/mild/moderate erythema at skin edges. No picking during time of observation. Wounds minor. NEPD.	[redacted]
					A: R + L sperm granuloma recently freshened, healing by 2° intn	
					P: Continue meloxicam (8/31). Communicated with PI concerning clearing of site coordination. Continue with vis ✓ 3x/week in OPM	[redacted]
8/28/20		G	G	N	SO: BAR, OPM: Sperm granulomas. R/L inguinal sperm granulomas ~4mm² both are C+D, no dried blood. Mild erythema at skin edges. No freshening. Readily ate treats. NEPD.	[redacted]
8/29/20		G	G	N	SO: BAR OPM Sperm granuloma (L) w/ sl moist in center (L) + (R) ~5 mm	
					A: Animal is picking @ sperm when housed in individual cage	
					P: Extend meloxicam another 3 cts & rev	[redacted]

MMU [redacted] M
9yrs 6mos 16.80kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 11 Days

Start 08-21-2020 End 08-31-2020

[redacted] Extended

Obs Form 12-16-2011

G = Good, F = Fair, P = Poor, N = Normal, SS = Semi Solid, L = Liquid, B = Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8-21-20	16.80				[redacted] [redacted] **8/21/2020**	
					___mls Ket. BCS= 4 Tartar: 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: R L Eye 16.80 kg 24hr___ 48hr___ 72hr___	
					sperm granuloma slightly open, clean w/DNS	
					ANIMAL MONITORED UNTIL RECOVERED	[redacted]
8/21/20					80. bilat sperm granuloma & mostly open but not problematic. Animal has been housed in a smaller cage & was recently displaced by a more dominant male so he may be picking @ his wounds/. A: Recurrent bilat. sperm granulomas P: SAGA meloxicam for 6d ✓ notes M W F C&T PRN	[redacted]
8/21/20		G	G	N	SO: BAR OP: sperm granuloma. Both sides C+D mild crust on L side	[redacted]
8/24/20		G	G	N	SO: BAR. OP: sperm granuloma, both sites C+D w/ mild erythema. No evidence of picking	
					A/P: see 8/21	[redacted]
8/25/20		G	G	N	SO: BAR. PE: R inguinal crusty & R-sperm granuloma is C+D, mild erythema at edges, no discharge seen, mild scabbing at edges	[redacted]
8/26/20		G	G	N	SO: BAR, OPM: Sperm granuloma. PE: (R) inguinal red crusty. (R) side sperm granuloma has mild erythema at skin edge w/ small amount of dried blood. No picking (L) inguinal	

MMU [redacted] M
9yrs 6mos 17.00kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 6 Days

Start 08-21-2020 End 08-26-2020

① RE wrong word [redacted] 8/24/20

Obs Form 12.16.2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] **California National Primate Research Center** Page # 61

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
8/14/20	cont				scab on (R) hand ~~pre~~ ① not present, ~2mm² area	
MMU [redacted] M 9yrs 6mos 17.00kg NRL03					slightly moist	
Meloxicam 5 mg/mL 0.10 mg/kg Dose; 1.7 mg Total Dose					SO: RE: Inguinal area Red + crusty	[redacted]
0.34 mLs Volume; SC Rte; SID Freq; 3 Days					A: Freshened sperm granuloma sites,	
Start 08-14-2020 End 08-16-2020					P: Restart Meloxicam, CTM 1x/wk	
					See vet plan 8/10	[redacted]
8/15/20		G	G	N	SO: BAR. RE: R ing. crusty; R granuloma has mild erth.	
					w/ white d/c, L C+D, scabbed. NEPD.	
					A/P: see 8/14.	[redacted]
8/17/20		G	G	N	SO: BAR (R) ing. sperm granuloma is still - ever so slightly	
MMU [redacted] M 9yrs 6mos 17.00kg NRL03					moist though almost resolved	
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose; 1.7 mg Total Dose					(L) side is ~6.7mm w/ hyperpigmentation	
1.10 mLs Volume; PO Rte; SID Freq; 3 Days					& white crusting. the (R) is almost	
Start 08-17-2020 End 08-19-2020					the same - but w/ slight moisture in	
					the center A: Resolving (R) sperm	
					granuloma P: Extend meloxicam	
KLC C-145326 In:17AUG@09:55 Prn17AUG@09:56					tx & CTM	[redacted]
8/19/20		G	G	CC	SO: BAR OP: Sperm granuloma; (R) side	
					mild erythema/hyperpigmentation, mild	
					scabbing. (L) side mild erythema/hyperpigmentation	
					as described above on 8/17. NEPD, took treats	[redacted]
8/20/20		G	G	CC	SO: BAR RE: CRUSTY L ING; L INGUINAL	
					SPERM GRANULOMA HAS SMALL AMT OF DRIED	
					BLOOD. R SIDE IS C+D. & ERYTHEMA. NEPD.	
					A: CHRONIC SPERM GRANULOMAS	
					P: CONSIDER Tx IF REPORTS PERSIST. C+T	
					PRN. CTM ON OP 1x/WK. ② ~~ASSESS FOR~~	
					~~CONT. Tx~~	[redacted]

① RE [redacted] 8/14/20 ② RE 8/20/20 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/8/20		G	G	CC	SO: BAR OP: Sperm granulomas, RH lac;	
					sperm granulomas have very mild erythema	
					mild crusting, dry. RH C+D, proximal	
					end of lac has ~2x3 mm scab	
					NEPD, readily ate treats	[redacted]
8/9/20		G	G	N	SO: BAR, OP: sperm granuloma, R-hand lac; R. hand	
					lac as described 8/9, no significant change,	
					granuloma sites dry, R-side has mild scabbing	
					with mild erythema, NEPD, readily took treats	[redacted]
8/10/20		G	G	N	SO: BAR OP: sperm granuloma RH lac	
					C+D prox end of lac has a scab ~	
					2x2 mm (R) (ne) sperm gran ~8 mm	
					w/ mild hyperpigmentation w/ mild/mod	
					white crusting (L) side ~5 mm	
					w/ mild hyperpig w/ mild/mod white crust	
					A: Slowly healing RH wound	
					sperm granulomas are currently	
					quiescent. P: cont to ✓ sperm granuloma	
					weekly ✓ hand on Thurs/Fri	
					to ensure cont. healing/resolved	[redacted]
8/13/20		G	G	N	SO: BAR OP: Sperm. Granulomas, RH lac;	
					(R) sperm granuloma white crusting, Right wrist	
					~2mm² scab, ~~vesicular~~ erythema, very mild	
					thickening, remaining laceration appears	
					resolved.	[redacted]
8/14/20		G	G	N	SO: BAR OP: Sperm granuloma; R+L sperm	
					granulomas moist with white D/c, (R) side	
					slightly bloody with mild erythema,	[redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/4/20					DNS, then expressed the DNS w/ manual digital pressure. No underlying muscle involvement.	
					Prepped aseptically + closed w/ a single SI suture (Vicryl 4/0).	
					Prior to lac repairs, an AP R hand radiograph was obtained ①, ~~which did not~~	
					Radiograph interpretation: There is mild/mod. soft tissue swelling around the (R) carpus.	
					No fractures, (sub)luxations, or other skeletal abnormalities.	
					A: (R) hand lacs x2, healing by 1° intention	
					P: ~~Ketoprofen given today. Start meloxicam tomorrow~~ ②	
					Start ketoprofen + cefazolin ③ ~~for~~ CTM on OP daily (vis ✓ sts)	[redacted]
					SDS: Lasered sperm granuloma site (1 cycle, 2.5 Hz, 1 min). Applied NF7	[redacted]
8/5/20		G	G	CC	SO: BAR, OP: sperm granuloma, R hand lac ; R-hand	
					lac has one sts remaining, mild/mod swelling of	
					hand, mild diffuse erythema, wound is C+D, no	
					d/c, using hand well, L inguinal lesion is C+D,	
					dry white d/c around site, erythema at lesion	
					edges, R inguinal lesion is C+D	[redacted]
8/6/20		G	G	N	SO: BAR OP: sperm granuloma, (R) hand	
					lac, (R) hand lac no sts visible, slight	
					swelling, dry and scabbed, very mild	
					erythema, hand use WNL, granuloma	
					sites both mild erythema, mild	
					crusting, NEPD, ate all treats	[redacted]
8/7/20		G	G	N	SO: BAR OP: sperm granuloma, RH lac;	
					sperm granulomas both dry with mild	
					crusting, very mild erythema, & swelling	
					Proximal aspect of lac has mild erythema	
					mild swelling, dry + scabbed, remaining	
					lac is clean + dry, NEPD, readily	
					ate treats	[redacted]

①Re [redacted] ②Re [redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/28/20		G	G	N	SO: BAR (R) OPM sperm granuloma	
					(L) & (R) side have hyperpigmentation	
					but RS&DS. crusting A: Recurrent	
					sperm granuloma P: CTM via MH &	
					OPM 1/WK C&T PRN If any d/c or	
					picking in area consider tx w/ meloxicam	[redacted]
8/1/20		G	G	N	SO: BAR RE: crusty/INGUINAL R SIDE;	
					BOTH AREAS C&D, NO ATTENTION PAID	
					A/P: SEE 7/28	[redacted]
8/3/20		G	G	N	SO: BAR (R) OPM sperm granuloma	
					(L) side is ~8mm w/ white crusting	
					w/ a dot in the middle No d/c	
					(R) side 5mm w/ hyperpigmentation	
					A/P see 7/28	[redacted]
8/4/20		G	G	CC	SO: BAR RE: inguinal red crusty; right inguinal	
					sperm granuloma is C&D, no d/c, hyperpigmented,	
					L granuloma is moist, no significant swelling,	
					erythema at skin edges, no attention to area	[redacted]
8/4/20	16.78				SO2: RE: RH trauma; diff. to view, sedated w/ 1.2 mls	
					Ket. & 0.4 mls Dexmed. suspect MMU did not receive	
					much of 1st dose, sedated w/ further 0.8 mls Ket, 0.5	
					mls Midaz. & 0.3 mls Dexmed. Gave 5 mg/kg Keto	[redacted]
					dose IM.	
					R hand palmar aspect: 3.0 cm skin laceration on thenar eminence w/	
					involvement of superficial subcutaneous fatty tissue; no muscle involvement.	
					Cleaned w/ DHS, prepped aseptically. Placed 1 cruciate suture (Vicryl 4/0) to	
					appose subcutaneous tissue. Closed skin w/ 5 SI sutures.	
					R wrist dorsal aspect has a 1mm² puncture. Distended puncture site w/	

MMU [redacted] M
9yrs 5mos 16.78kg NRL03

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 84 mg Total Dose
0.80 mLs Volume — IM Rte — SID Freq — 3 Days
Start 08-04-2020 End 08-06-2020

Cerazolin 330 mg/mL
25.00 mg/kg Dose — 420 mg Total Dose
1.30 mLs Volume — IM Rte — BID Freq — 5 Days
Start 08-04-2020 End 08-08-2020

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/21/20	cont				D/C, ~0.5 cm² ↓swelling, ↓erythema, (L) side C+D and appears intact. No attention paid to either side on observation took treats, NEPD	
MMU [redacted] 9yrs 5mos 17.19kg M NRL03						
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose; 1.7 mg Total Dose						
1.10 mLs Volume; PO Rte; SID Freq; 3 Days; Start 07-21-2020; End 07-23-2020						
					A: Freshened sperm granuloma site P: Restart meloxicam, CTM on OP 1x/wk	[redacted]
7/24/20	17.00				Box Weight	
7/25/20		G	G	N	SO: BAR (P) RE: Crusty swollen inguinal Rightside; (L) sperm granuloma C+D scabbed, ~0.5 cm², ↓ erythema, ↓ swelling; (R) sperm granuloma site has ~1 cm² x 0.5 cm area of swelling with slightly yellow exudate very mild erythema, ↓ attention paid on observation, took treats, active and streching well, NEPD	
MMU [redacted] 9yrs 5mos 17.00kg M NRL03						
Meloxicam 1.5 mg/mL 0.10 mg/kg Dose; 1.7 mg Total Dose						
1.10 mLs Volume; PO Rte; SID Freq; 3 Days; Start 07-25-2020; End 07-27-2020						
					A: Swollen sperm granuloma site P: Restart meloxicam, CTM on OP 1x/wk	[redacted]
7/26/20		G	G	N	SO: BAR RE: GENITAL RED/CRUSTY; L SIDE SCABBED & DRY, MILD ERYTH. ↓ D/C ON SWELLING. R SIDE C & D, SCABBED W/ DRIED BLOOD. ↓ D/C ON SWELLING. ↓ ERYTHEMA. A: CHRONIC SPERM GRANULOMAS ON Tx P: CTM ON OP 1x/wk	
7/28/20						[redacted]
					Recharge	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7-11-20		G	G	CC	SO: BAR, (P) (L) side skin appears intact, mild erythema	
					⊖ scab, ⊖ swell, (R) side 2 ea scabbed ~3mm, mild erythema	
					⊖ swell, ⊖ attention paid ~~A: I, RAT~~, NEPD, active, ate treats. (1)	[redacted]
					SO2: OPM: sperm granuloma; see above.	[redacted]
7/12/20		G	G	N	SO: BAR (P) RE: genital red crusty, OPM: sperm	
					granuloma; (L) side appears freshened, edges	
					C+D + well-adhered. Mildly erythematous w/	
					no swelling. (R) side C+D + scabbed w/ poss.	
					mild erythema. Active in cage. NEPD, readily	
					ate treats. No attention paid cageside	
					A: Freshened sperm granuloma site.	
					P: Re-start meloxicam w/ PI approval.	
					visv sperm gran. site daily until healed	[redacted]
7/13/20		G	G	N	SO: BAR (P) OPM: sperm gran. (L) side	
					~5mm² & (R) side ~3mm² hyperpigment	
					w/ mild white crusting. A: healing	
					sperm granuloma on meloxicam	
					P: CTM @ least 1/wk, C S/T PRN	
					If any flare up or animal picking @	
					areas, consider tx w/ meloxicam	[redacted]
7/20/20		G	G	N	SO: BAR. Animal not placed during exam. OPM: sperm gran.	
					Overall no significant change. Mild erythema on both	
					sides. (L) side ~5mm scab (R) side ~3mm scab.	
					A: Healing sperm granuloma.	
					P: CTM on OPM 1/week & S/T PRN. See next 7/13	[redacted]
7/21/20		G	G	CC	SO: BAR (P) RE: Red crusty inguinal Right side,	
					(R) side sperm granuloma site is slightly	
					bloody with a small amount of serosanguinous	

(1) RC 7/11/20 [redacted]

MMU [redacted] M
9yrs 4mos 17.19kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 3 Days
Start 07-12-2020 — End 07-14-2020

Obs Form 12-16-2011 — G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] M
9yrs 4mos 17.19kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 3 Days
Start 07-07-2020 — End 07-09-2020

DDI c-143384 Ins07JUL912:25 Pro07JUL912:25

Date	Weight (kg)	Appetite (G, F, P) ⊕	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊗	Observations	Initials
7/7/20		G	G	N	SO: BAR (P), OPM: Sperm Granuloma. (R) side inguinal sperm granuloma freshened w/fresh blood. wound ~5mm² contracted skin edges not apposed. (L) side sperm granuloma C+D ~5mm² wound w/fibrin in wound bed. No puking visualized. A: (R) sperm granuloma freshened off tx	
					P: Restart Meloxicam/extend V's ✓ Daily OPM, sent email ⊗	[redacted]
7/8/20		G	G	N	SO: BAR (P) OP: sperm granuloma; (L) site ~0.5 cm², edges well adhered mild erythema, clean, slightly moist, (R) site ~0.5 cm² edges adhered, very mild erythema, clean slightly moist, active + interactive, Took treats, attention paid, NEPD	[redacted]
7/9/20		G	G	N	SO: BAR (P) OPM: sperm granuloma; (L) site scabbed ~3-4mm. (R) site sl. moist. Scabbed ~3-4mm w/ edges adhered. Both mildly erythematous w/ no swelling. No attention paid to either site cageside. NEPD. Readily ate treats.	[redacted]
7/10/20		G	G	N	SO: BAR (P) OP: sperm granuloma both sites C+D scabbed mild erythema & attn paid & swelling both ~0.5 cm² Active + interactive, took treats NEPD	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
7/2/20		G	G	N	SO: BAR RE: RED / CRUSTY INGUINAL (L);	
					BOTH SPERM GRANULOMA SITES DNE CTD	
					W/ NO D/C OR ERYTHEMA. NEPD	
					A: STABLE SPERM GRANULOMAS	
					P: CTM ON OP 1x/WK	[redacted]
7/4/20		G	G	N	SO: BAR (P) RE: SWOLLEN (L) INGUINAL; (L) SIDE	
					SPERM GRANULOMA HAS MILD SWELLING ~1 cm² x	
					0.5 cm WITH ↓ ERYTHEMA, ↓ ATTENTION PAID	
					SKIN IS INTACT, TOOK TREATS, NEPD	
					A: MILD SWELLING OF SPERM GRANULOMA	
					P: START MELOXICAM PER 6/29,	
					CTM ON OP 1x/WK, CTM ON MTT	[redacted]
7/5/20		G	G	CC	SO: BAR (P) RE RED CRUSTY LEFT INGUINAL;	
					(L) SIDE SPERM GRANULOMA SLIGHTLY MOIST/BLOODY	
					~0.75 cm² ↓ SWELLING, MILD ERYTHEMA, ↓ ATTENTION	
					PAID; (R) SIDE SPERM GRANULOMA APPEARED	
					SLIGHTLY SWOLLEN ~0.5 cm² x ~0.25 cm SKIN	
					APPEARS INTACT MILD ERYTHEMA, ACTIVELY	
					STRECHING WELL, TOOK ALL TREATS	
					A: MILD SWELLING/CRUSTING OF SPERM GRANULOMA	
					P: CONT TX, CTM ON OP 1x/WK, CTM ON MTT	[redacted]
7/6/20		G	G	N	SO: BAR (P) (L) 1-8 mm², (R) ~15 mm²	
					WITH HYPERPIGMENTED W/ SL WHITISH CRUSTING	
					A: LEGS SPERM GRAN AREAS/LESIONS	
					HOPEFULLY HEALING ON MELOXICAM	
					P: ✓ 7/7 TO ASSESS THE NEED TO CONT	
					MELOXICAM OR NOT. OTHERWISE 1/WK	
					ON OP & TX W/ MELOXICAM IF ANIMAL	[redacted]
					PICKING OR LESION FLAREUP	

MMU [redacted] M
9yrs 4mos 17.19kg NRL03

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — 1.7 mg Total Dose

1.10 mLs Volume — PO Rte — SID Freq — 3 Days
Start 07-04-2020 End 07-06-2020

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9-30-19		E G	G	N	SO: BAR. (P) OP: Low BCS, poor app; Animal ate 4/7 Chow plus forage and training treats. Animal active with NEPD. Normal amount of stool in cage pan.	[redacted]
Recharge						
10/4/19	5.40					
10/4/19					A: Lean animal, wt stable on supps P: Assess to D/C if wt remains stable & monitor on LTOP	[redacted]
10/5/19 MMU [redacted] LOCATION [redacted] / 0.6 MLS KET WT: 5.42 CAGE TIME 2:22 15MIN 1 30MIN 2 45MIN 3 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___						[redacted]
10/5/19		G	G	N	SO: BAR RE: LEFT HAND CUT; POSSIBLE TRAUMA LHD5, UNABLE TO FULLY VISUALIZE CAGESIDE. ANIMAL LICKING & BITING @ AREA. SO_2: DELIVERED SEDATED TO 1310. ~ 2cm LACERATION @ PALMAR SURFACE OF LHD5, W/SMALL AREA OF NECROSED TISSUE. EXCISED NECROTIC TISSUE, (ASEPTICALLY PREPPED) & CLOSED W/ 3-0 VICRYL IN A SI PATTERN. APPLIED NEW SKIN TO EDGES. A: LHD5 LACERATION, HEALING BY 1° INT. P: CTM DAILY ON OP, START KETOPROFEN.	[redacted]
① 10/4/19		P F	G	N	SO: BAR (P) RE: poor app; FEED LOG STATES ½ CHOW LEFT. ATE SUPPS & ALL OFFERED TREATS. NEPD A/P: SEE 10/4 ENTRY ABOVE	[redacted]
10/6/19		G	G	N	SO: BAR (P) OP: (L) HAND STS; RE: (L) HAND TRAUMA, MOST STS PULLED OUT, ~ 2 REMAIN. WOUND IS C&D W/O SWELLING OR ERYTHEMA.	[redacted]

MMU [redacted] F
8yrs 6mos 5.40kg NRL03

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 27 mg Total Dose
0.27 mLs Volume — IM Rte — SID Freq — 3 Days
Start 10-05-2019 End 10-07-2019

① LE 10/5/19 [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0 mg/ml

Animal ID# [redacted] California National Primate Research Center Page # 26

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/20/19	5.52				Box weight	[redacted]
9/21/19		?	G	N	S: BAR (P) R: poor app; chow log reads	
					6 chow remaining. 0 chow left in cage.	
					Reading ate treats, ate all supps.	
					A: poor app / variable app for chow. Recent	
					wt ↑	
					P: CTM 1x/wk on OP, cont. supps	[redacted]
9/22/19		?	G	N	S: BAR (P) R: Poor app; 1 chow eaten	
					per chow log. Ate supps & all offered	
					treats. 0 chow in cage.	
					A/P: see 9/21 entry	[redacted]
9-23-19		?	G	N	S: BAR (P), OP: Low BCS / poor app: Ate 2/7 chow	
					per log. All supps eaten, readily ate treats.	
					Animal active with NEPD. normal amount of	
					stool in cage.	[redacted]
9/25/19		F	G	N	S: BAR (P), OPM: Low BCS/Poor App.	
					R: Poor App (1 chow) Clean cage	
					no chow, ate apricot offered,	
					ate scratch and supps.	
					A: Unconfirmed Poor App for chow	
					clean cage on Supps w/ wt ↑	
					P: CTM on OPM 1x/week	
					Continue long term Supps	[redacted]
9/28/19		?	G	N	S: BAR (P) R: poor app; No chow left,	
					chow log states 1/7 chow consumed.	
					Reading ate treats. NEPD	
					A/P: see 9/21 entry	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9-6-19	5.35				[redacted] [redacted] ① 9/6/2019	
					8 mls Ket. BCS= 1.5 Tartar (0) 1 2 3 4 Teeth Scaled Y (N)	
					TB Test (R) L Eye 24hr ___ 48hr ___ 72hr ___	
					ANIMAL MONITORED UNTIL RECOVERED	
					① Tartar Should Read Ø [redacted] 9-6-19	[redacted]
9/6/19					A: WA stable	
					P: CTM 1x/wk + monitor wt regularly	[redacted]
9-9-19		G	G	CC	SO: BAR (P) OP: Low BCS / poor app; Animal ate chow	
					plus supps and forage. Animal is active with NEPO.	[redacted]
9/9/19					SO: CBC (9/6) WNL Chem 20 (9/6) WNL	
					A: WA stable No clin lab abn Good intake	
					~~P: CTM via NH now~~ ① P: Cont to	[redacted]
					monitor 1/wk on OP, cont biweekly	
					WA rec ✓ cont supps (1/21/20)	
					Consider d/c to HOP when WA is	
					>5.42 w/ upward or very stable	
					trend	[redacted]
9-16-19		G	G	N	SO: BAR (P) OP: Low BCS / poor app; Animal ate 4/7	
					chow plus supps and training treats. Animal active	
					with NEPO.	[redacted]
9-17-19		G	G	CC	SO BAR (P) OP/RE: poor app to chow: Animal ate chow	
					plus supps and treats. Active with NEPO.	[redacted]
9/19/19		?	G	N	SO: BAR (P) RE: poor app; NO CHOW LEFT	
					IN CAGE, READILY ATE TREATS. CHOW LOG	
					SHOW 1 BISCUIT EATEN OVERNIGHT. ATE SUPPS	
					A: poor app on supps	
					P: CTM on OP 1x/wk, CONT. SUPPS AS	
					PLANNED	[redacted]

RE Wt only recorded [redacted] 9/9/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0 mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 24

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/16/19	5.55				mvd to [redacted] # 19-559	[redacted]
8/17/19					SO: BAR OP: Poor app; animal	
					appears NEPD and unable to	
					confirm # of chow left due to them	
					being pulled, ate snacks cageside	
					A: poor app, most likely eating supps	
					P: Continue supps and ✓ visually	
					1x/week	[redacted]
8/19/19		G	G	CC	SO: BAR (P) OPM/RE: POOR APP; ate supps, ate 5 total chow	
					today per food log. 1 chow remaing b/t cages. NEPD.	
					A: wt. ↑ on supps P: ctm 1x/wk on OP, as reported.	[redacted]
8/23/19	5.31					[redacted]
8/26/19		G	G	N	SO: BAR (P) OPM: low bcs, poor app.; ate 5 total	
					chow per log, no supps remaining. slight wt. ↓ NEPD.	
					A: slight ↓ wt @ recent ✓ P: ctm 1x/wk on OP. If	
					wt. continues to trend down, consider room relocation.	cb
8/29/19		G	G	N	SO: BAR (P) OP/RE: POOR APP; NO CHOW REMAIN	
					IN CAGE. READILY ATE ~~[illegible]~~ OFFERED TREATS.	
					ATE SUPPS. NEPD	
					A: 1ST RECENT REPORT FOR POOR APP	
					P: CTM ON OP 1x/WK, CONT. SUPPS. CONT WT.	
					MONITORING	[redacted]
9/3/19		G	G	N	SO: BAR RE/OP: POOR APP; ate 4 chow per food log, ate	
					supps. NEPD.	
					A/P: see 8/26	[redacted]

Recharge

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/29/19		G	G	N	SO: BAR (P) OPM: low BCS/poor app.; ate 7 total chow	
					per food log, ate supps. mmu active, no chow or	
					supps remain b/t cages.	
					A/P: see 7/26	[redacted]
7/30/19		G	G	N	SO: BAR (P) OPM/RE: POOR app.; see 7/29 entry. mood	
					overall app. for 7/29. suspect ate supps, no food	
					remaining b/t cages.	
					A/P: see 7/26.	[redacted]
4/2/19					A: Consulted w/ ATTY & confirmed animal	
					is currently eating bars, has a history	
					of rotating preferences	
					P: Continue supps & wt monitoring,	
					Consider OK to LOOP if wt	[redacted]
					consistently >5.42 kg	
8/5/19		G	G	CC	SO: BAR (P) OPM: low BCS/poor app.; ate supps, per food	
					log ate 8 chow 8/4/19. No food remaining b/t cages.	
					A/P: See 8/2/19.	[redacted]
8/6/19		G	G	N	SO: BAR (P) RE: POOR APP.; ate 3 chow this am,	
					ate supps.	
					A/P: see 8/2	[redacted]
8/7/19					moved to [redacted] move # 19-532	[redacted]
8/9/19	5.40					
8/14/19		?	G	CC	SO: BAR OP: low BCS; animal just fed, unable to	
					fully assess appetite, appears to have eaten supps,	
					readily took treats A: low BCS, on supplements P: see	
					8/2 entry	[redacted]
8/15/19					A: Pt wt stable, low BCS	
					P: V/S ✓ Ro/w/e, cont' supps, PE sch. next bmd	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

BC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5 mg/ml

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/8/19		G	G	N	SO: BAR (P) RE: 10PM POOR APP.; No chow remaining b/t	
					cages, ate 7 chow 7/7 per food log.	
					A/P: STC 6/24.	[redacted]
7/12/19	5.34					
7/13/19		?	G	N	SO: BAR (P) RE: poor app; No CHOW LEFT IN	
					CAGE. READILY ATE TREATS, ATE SUPPS. NEPD.	
					A: poor app on Supps	
					P: CTM 1x/wk on OP	[redacted]
7/16/19		G	G	N	SO: BAR RE: poor app; actively eating at observation,	
					1 chow remaining, supps eaten A: variable appetite,	
					low BCS, static weight since 6/26 P: see 6/24/19	
					entry, CTM 1x/wk on OP	[redacted]
7/17/19					A: Mild wt gain rebounded - at higher	
					end of historic range	[redacted]
					P: ✓ AHS 1x/wk & CTM weights	[redacted]
7/18/19					P: ADD DRIED FRUIT TO SUPPS	
MMU [redacted] F 8yrs 4mos 5.34kg NRL03 Prunes Dose Total Dose Volume PO Rte SID Freq 7 Days Start 07-18-2019 End 07-24-2019						[redacted]
7/22/19		G	G	N	SO: BAR (P) 0PM: low bcs/poor app.; MMU ate 5 chow,	
					ate supps.	
					A/P: See 7/17	[redacted]
7/26/19	5.42					
7/26/19					A: Accepted frozen bar when offered, wt ↑ slightly	
MMU [redacted] F 8yrs 4mos 5.34kg NRL03 Long Term Bars 1.00 bar/animal Dose 1. Bar Total Dose					P: Continue to encourage intakes, Δ supplements	
					PRN, CTM wt @ cage change	[redacted]

1.00 Bar Volume PO Rte SID Freq 180 Days

-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

trations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
6-10-19		G	G	N	SO: BAR OP: Low BCS / Poor App; Animal Ate All	
					7 chow plus supps. Active with NEOD.	[redacted]
6/14/19	5.22					[redacted]
6/14/19					A: wt gain	[redacted]
					P: See 5/24	
6/17/19		G	G	CC	SO: BAR (P) OPM: low BCS/ poor app.; No food b/c cages.	
					Food log from 6/16 states MMU ate 6 chow. suspect	
					ate supps.	
					A/P: see 6/7 entry.	[redacted]
6/24/19		G	G	CC	SO: BAR (P) OPM: low BCS/ poor app; food log from 6/23	
					shows 6 total chow eaten yesterday. Suspect ate	
					supps.	[redacted]
					A: wt gain on supps. P: see 5/24.	
6/24/19					A: wt remains in historic range w/	
					low BCS	
					P: Lab modifying feeding activities,	
					if wt continues to trend up then	
					consider making changes permanent. If	
					no significant improvement consider	
					relocation or combined training/ therapeutic	[redacted]
					intervention, per discussion w/ behavior	
6-26-19	5.30				Box wt	[redacted]
6/28/19	5.39					[redacted]
7/1/19		G	G	N	SO: BAR (P) OPM: low BCS/ poor app; ate 4 chow per food log,	
					ate supps.	
					A/P: see 6/24 entry	[redacted]
7/3/19					A: wt increases, A/P see 6/24	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5.0 mg/mL Diazepam 5.0mg/mL

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5/24/19					Discussed case w/ lab staff re behavior,	
					come up w/ modifications to practices	
					for testing/training of other animals	
					to limit visual access. Will also offer	
					a portion of chow soaked in water	
					or juice to encourage intake	
					A: Consistent low BCS, despite discontinuation	
					of direct project testing/training	
					P: CTM 1x/wk on OP, monitor	
					for any changes in wt. If wt	
					does not increase, then consider relocation	
					to a different room	[redacted]
5/28/19		G	G	N	SO: BAR OPM: low BCS/poor app; ate 4 chow, most suppl.	
					MMU active + readily ate treats.	[redacted]
5/29/19		G	G	N	SO: BAR OPM: low BCS Readily ate	
					treats. Active and threatening	
					A/P - See 5/24 entry	[redacted]
5/31/19	4.96					
6/3/19		?	G	CC	SO: BAR OPM: low BCS/poor app.; No chow remaining	
					in enclosure, ate fig bar & most peanuts.	
					A: wt. down slightly on suppl. See 5/24 entry.	[redacted]
6/5/19		?	G	N	SO: BAR OP: WT LOSS; TREATMENT TECHS REPORT	
					ANIMAL IS NOT EATING AN SUPPS. MOVING WELL,	
					NEPD. ACCEPTED A PEANUT.	
					A: WT LOSS	
					P: ADD RICE CEREAL TO SUPPS, CTM 1x/WK	[redacted]
6/7/19					A: wt loss case, no sig. affect change in past	
					few weeks. P: See 5/24	[redacted]

MMU [redacted] F
8yrs 2mos 4.96kg NRL02

Rice Cereal

Dose Total Dose

Volume PO Rte BID Freq 6 Days

Start 06-05-2019 End 06-10-2019

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
5/8/19	CONT'D				P: EXTEND KETO + SIMBADOL 4 DAYS. REASSESS	
					AFTER TX ENDS. CTM DAILY ON OP. CONTACT	
					SRA ☒	[redacted]
5/9/19		?	G	N	SO: BAR OP: FACIAL TRAUMA; VERY MILD	
					SWELLING, APPEARS REDUCED FROM PREVIOUS	
					OBSERVATION. RESOLVING BRUISING. NO CHOW	
					IN CAGE. ANIMAL IS MOVING WELL W/ NEPD.	[redacted]
5/10/19		G	G	N	SO: BAR OP: FACIAL TRAUMA; EXTREMELY	
					MINIMAL SWELLING @ BRIDGE OF NOSE. RESOLVING	
					BRUISING, ABRASIONS HEALING. MOVING WELL,	
					NEPD.	[redacted]
5/11/19		F/P	G	N	SO: BAR OPM: facial trauma; noted improved swelling from	
					last personal observation. Manu ate 1 chow, ate all supps.	[redacted]
5/12/19		?	G	N	SO: BAR (P) OP: FACIAL TRAUMA, RE: poor app;	
					NO CHOW LEFT IN CAGE. HUSBANDRY REPORTS 3	
					CHOW EATEN. VERY MINIMAL SWELLING @ NOSE,	
					RESOLVING BRUISE. ATE ALL SUPPS.	
					A: 2nd REPORT FOR POOR APP IN 7 DAYS,	
					HEALING FACIAL TRAUMA.	
					P: CTM DAILY ON OPM.	[redacted]
5/13/19		F	G	N	SO: BAR OPM: low BCS/poor app; ate 3 chow, supps.	
					facial trauma resolving well.	
					A: good app. facial trauma resolving.	
					P: ctm appetite + wt on OPM 1x/wk.	[redacted]
5-15-19	5.08				Box wt.	
5/17/19	5.00					
5-21-19		G	G	CC	SO: BAR, OP: Low BCS/Poor App; Ate 4/7 chow plus supps.	
					Animal active with NEPD	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
5/4/19		?	G	N	SO: BAR (P) RE: OP: FACIAL TRAUMA / POOR APP ; 10 CHOW	
					IN CAGE, REC. FED. MOVING WELL, TOOK TREATS.	
					MILD - MOD ENYTHEMA (R) BROW & NOSE. MILD	
					SWELLING OF NOSE. NO RESPIRATORY PROBLEM,	
					BREATHING WELL.	
					A: FACIAL TRAUMA, POOR APP ON TX	
					P: CTM DAILY ON OP	[redacted]
5/5/19		P/F	G	N	SO: BAR, aPM: low bcs, poor app., facial trauma; ate 0 chow	
					@ am feeding but ate supps. Noted mild swelling	
					+ erythema @ nose bridge + minor bruise outside of	
					(R) eye. Moving well in b/t cages.	[redacted]
5/6/19		F/P	G	N	SO: BAR OPM: low bcs, poor app, facial trauma, ate 2 chow,	
					ate supps. Bruising @ (R) eye appears mildly improved,	
					nose bridge swelling + erythema static.	
					A: static swelling + erythema @ nose bridge.	
					P: restart keto., start simbadol, ctm comfort daily,	
					update project ☒.	[redacted]
5/7/19		G	G	N	SO BAR (P) OPM: low bcs / poor app. / facial trauma; animal	
					ate 5 chow + all supps. No obvious changes in	
					erythema + swelling @ nose bridge. active b/t cages.	[redacted]
5/8/19		G	G	N	SO: BAR (P) RE: SWOLLEN NOSE, OP: FACIAL TRAUMA;	
					MODERATE BRUISING ON & AROUND BRIDGE OF NOSE	
					THAT APPEARS TO BE RESOLVING. VERY MILD	
					SWELLING. ABRASIONS APPEAR TO BE HEALING,	
					SCABBED, C&D. BRIGHT & INTERACTIVE, MOVING	
					WELL.	
					A: SLOWLY RESOLVING FACIAL TRAUMA, POSSIBLE	
					BROKEN NOSE.	[redacted]

MMU [redacted] F
8yrs 1mo 5.19kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 26 mg Total Dose
0.26 mLs Volume — IM Rte — SID Freq — 3 Days
Start 05-06-2019 End 05-08-2019

2.10 mLs Volume — SC Rte — Q3D Freq — 3 Days
Start 05-06-2019 End 05-08-2019

MMU [redacted] F
8yrs 1mo 5.19kg NRL02

Simbadol (Buprenorp
0.72 mg/kg Dose — 3.7 mg Total Dose
2.10 mLs Volume — SC Rte — Q3D Freq — 7 Days
Start 05-06-2019 End 05-12-2019

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 26 mg Total Dose
0.26 mLs Volume — IM Rte — SID Freq — 7 Days
Start 05-06-2019 End 05-12-2019

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
4/22/19		G	G	N	SO: BAR, OP: low BCS/poor appe ; paired, all supps	
					eaten, animal is bright & active. A: fluxuating	
					weight, on supps P: Await project plan	[redacted]
4/29/19		G	G	N	SO: BAR OPM: low BCS/ POOR APP ; animal ate supps	
					& all chow offered from yesterday. NEPP.	[redacted]
5/3/19	5.19				Box WT	[redacted]
5/3/19		G	G	N	SO: BAR RE: AAR - SWOLLEN NOSE, CUTS & BRUISES;	
					ANIMAL HAS A SMALL ABRASION LATERAL TO (R)	
					EYE (2mm x 1mm) WITH 2mm² BRUISE. NOSE HAS VERY	
					MILD SWELLING W/A SMALL ABRASION (2mm²), BOTH	
					ARE SUPERFICIAL & NOT BLEEDING & Ø ERYTHEMA.	
					HUSBANDRY STAFF STATES THAT THE ANIMAL GOT	
					OUT OF THE CAGE DURING CAGE CHANGE AND	
					WAS NET CAPTURED, SUSTAINING FACIAL TRAUMA	
					FROM THE NET. ANIMAL IS BRIGHT &	
					INTERACTIVE & MOVING WELL, NEPD	
					A: MINOR FACIAL TRAUMA	
					P: NO TX INDICATED @ THIS TIME. CTM ON	
					ROUTINE MH	[redacted]
5/3/19					SO2: LAB STAFF REPORTS ANIMAL'S NOSE HAS	
					SWELLED MORE THIS AFTERNOON.	
					A: MINOR FACIAL TRAUMA	
					P: START KETOPROFEN, DAILY VIS ✓, ASSESS	
					OFF KETOPROFEN & ↓ TO 1x/WK IF NOT	
					PAINFUL	
						[redacted]

MMU [redacted] F
8yrs 1mo 5.30kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 27 mg Total Dose

0.27 mLs Volume — IM Rte — SID Freq — 3 Days
Start 05-03-2019 — End 05-05-2019

[redacted] C-122016 Ins03MAY15:20 Prn03MAY15:20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

DC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
4/2/19					A: Minor changes don't explain wt loss	
					P: continue supps and coordinate re✓ Chem in 1-2 weeks	[redacted]
4/5/19	5.30					[redacted]
4/8/19		G	G	N	SO: BAR, paired OP: low BCS/poor appe; animal is bright & active, NEPD, all chow & supps eaten A: ~10% weight gain in the last 2 weeks, low BCS P: cont supps, CTM weight gain, vis✓ 1x/wk re✓ Chem week of 4/15	[redacted]
4/10/19					SO: SRA to coordinate blood draw for re✓ Chem this week. A/P - see above	[redacted]
4/16/19		G	G	N	SO: BAR, paired OP: wt loss, thin; animal is bright & active, all supps eaten AP: see 4/8 entry	[redacted]
4/20/19					SO: Chem 20 (4/17) tbo not otherwise WNL Animal has always had a low wt & BCS However recently her wt has bounced around a bit despite LT supps. Animal is currently on a project that may interact w/ animal a lot @ time which may or may not affect the animals wt P: Send e-mail to request 1 mo of no interactions/manip w/ project to determine if animal's wt will stabilize and we can better assess her overall status	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Alfaxalone 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations		Initials
3/28/19		?	G	N	SO: BAR(P) Re: Poor appetite. Ate ____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 2nd recent confirmed report. P: CTM on MH / OP	~22 chow remaining in enclosure. ate supps. difficult to assess appetite/ intake. NEPD.	[redacted]
3/29/19		P/F	G	N	SO: BAR , Re: Poor appetite. Ate ____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 3rd recent confirmed report. P: CTM on MH / OP	Per feed log, no am chow eaten, no pm. ate supps, readily ate treats. If reports persist, consider admit.	[redacted]
3/30/19		?	G	CC	SO: BAR , Re: Poor appetite. Ate ____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 4th recent confirmed report. P: CTM on MH / OP	~22 chow remaining. ate supps. NEPD, readily ate treats. Per Vet, start addtl. supps., await Vet assess.	
3/31/19					**Admit ⊗ Prob. Sheet ⊗**	So OPM: PA was not reported for PA today. A Appetite improved w/ supps. P: CTM on OPM 1x/wk. If PA persists consider further work-up or have behavior consult	[redacted]
4/2/19					SO: BAR(P) OPM: Poor app. Cage was recently cleaned + chow pulled, so unable to confirm poor app. It appears all supps were eaten. Animal appears bright + active.		[redacted]
4/2/19					CBC from 3/25 unremarkable, chem shows mildly elevated bilirubin, C.f.		[redacted]

MMU [redacted] F
8yrs 0mos 4.85kg NRL02

Fruit + Veggies

Dose Total Dose

Volume PO Rte SID Freq 7 Days
Start 03-31-2019 End 04-06-2019

Volume PO Rte SID Freq 7 Days
Start 03-31-2019 End 04-06-2019

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 14

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
2/8/19					MMU [redacted] 0.6 CC KET /D->1310 W/O 4518 NRL02	[redacted]
WT:					CAGE TIME 2 4/ 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___	
3/13/19	5.56					[redacted]
3/18/19		G	G	N	SO: BAR Re: poor app & at viewing animal had 3 chow left, ate forage, peanuts, fig bar & puzzle tube, bright & interactive A: adequate intake P: CTM on routine MH	
		①				[redacted]
3/22/19	5.32	P	G	N	SO: BAR , Re: Poor appetite. Ate 1 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. Ant recent confirmed report. P: CTM on MH / OP — ate SUPPS. NEPD.	[redacted]
						[redacted]
3/25/19	4.85					

PHYSICAL EXAM

Date 3/25/19 Weight 4.85 BCS 1.0

HR 186 RR 42 TEMP 101.4

☐ Project Code
☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal mild muscle atrophy
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation WNL

SO: Received sedated, 0.5 kg wt loss since 2/8/19 PE collected CBC/Chem
A: low BCS, wt loss
P: Auto CBC Chem [redacted]

Animal may be unpaired or individually housed while receiving veterinary care

3/25/19 WT: 4.85 — 0.7 MLS KETMINE IM, BLED ___ MLS, ROOM ROUND UP, TB TEST LEFT EYE 24HR----/ 48HR-/- 72HR--/, ANIMAL MONITORED UNTIL RECOVERED [redacted]

① Pe entry written 3/23/19. 3/23/19 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
2/14/19		G	G	N	SO: BAR RE: vomit - unconfirmed	
					no vomit seen at time of	
					observation	
					A: possible emesis	
					P: CTM w/ routine MH	[redacted]
2/22/19	5.100					[redacted]
3/1/19		G	G	N	SO: BAR(1), RE: Vomit. Cage cleaned by NEPD.	
					time of observation.	
					A: Unable to confirm emesis. 2nd recent	
					P: CTM on MH / OP.	
						[redacted]
3/5/19		G	G	CC	SO: BAR RE: bruise / face trauma; bruise with	
					scabbing on lateral right eye, eye is open &	
					comfortable, no swelling or bleeding A: bruising,	
					suspect pairing door trauma P: CTM on routine	
					MH, no tx indicated at this time.	[redacted]
3/6/19		G	G	N	SO: BAR, paired RE: face trauma, unchanged; bruise	
					& scabbing as described 3/5, eye is open &	
					comfortable A/P: see 3/5 entry	[redacted]
3/7/19		G	G	N	SO: BAR(P) RE: (P) face trauma; Noted mild - mod. bruising	
					@ lateral (P) eye + brow. OU WNL. No broken skin	
					observed, no ocular d/c.	
					A: minor facial bruising, no tx @ this time.	
					P: CTM on routine MH.	[redacted]
3/8/19		G	G	N	SO: BAR (P) RE: (P) eye red; no change from 3/7 entry.	
					Animal bright + active, NEPD.	
					A: minor facial bruising, no tx @ this time.	
					P: CTM on routine MH.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/21/18		G	G	N	SO: BAR (P) Re: (R) eye mass. Active & moving	
					well. Noted sm. mass @ medial aspect of (R)	
					brow ridge, ~0.75 x 0.75 cm x ~3.4 mm, sl. red/ erythe-	
					matous in color. A: (R) eye mass, NEPD, CAD.	
					P: CTM on MH.	[redacted]
12/28/18	S.02					[redacted]
12/30/18		G	G	N	SO: BAR , Re: Poor appetite. Ate 2 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP — 5 partial chow remaining animal ate all supps, NEPD.	
						[redacted]
1/11/19	S.40					[redacted]
1/13/19		G	G	N	SO: BAR (P) Re: Poor appetite. Ate all chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP — all chow, supps, & forage gone b/t cages. NEPD.	
						[redacted]
1/25/19	S.44					[redacted]
2/8/19	S.42					[redacted]

PHYSICAL EXAM

Date 2-8-19 Weight 5.42 BCS 1.5+

HR 156 RR 40 TEMP 101.5

☐ Project Code

☒ Shave Tattoo

1. Integument bruised on hip cling
2. Oral Cavity silver stain on teeth (incisor)
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation —

SO: sedated, animal is chewing of silver stain object but her teeth are clean, no tartar, small bruised on the chin
A: Thin animal
P: Continue IT supplement

Animal may be unpaired or individually housed while receiving veterinary care

MMU [redacted] F
7yrs 11mos 5.18kg NRL02
Long Term Peanuts
1.00 serving/animal Dose — 1. serving Total Dose
1.00 serving Volume — PO Rte — SID Freq — 365 Days
Start 11-16-2018 End 11-15-2019
Extended

MMU [redacted] F
7yrs 11mos 5.04kg NRL02
Long Term Fig Bars
1.00 bar/animal Dose — 1. Ba Total Dos
1.00 Bar Volume — PO Rte — SID Freq — 36. Day
Start 08-26-2018 End 08-25-2019
Modified Extended

Obs Form 12-16-2011 G = Good, F = Fa

Animal ID# [redacted]

California National Primate Research Center

Page # 11

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
9/28/18	5.16	[redacted]			[redacted] **9/28/2018** 0.1mls Ket. BCS= 2 Tartar 0 1 2 3 4 Teeth Scaled Y N TB Test: R Eye 24hr — 48hr — 72hr — Trimmed nails MONITORED UNTIL RECOVERED	[redacted]
10/20/18		F	G	N	SO: BAR P RE: lixit off over night. Did Not eat all Morning chow. very active in cage. Accepted Fruit. Performed arm pull blood collection Nova: **NOVA results:** pH: 7.36 Hct: 48 HCO3: 26.9 Na: 153.7 K: 4.66 Glu: 75 BUN: 19 Creat: 0.9 A: Mild dehydration 2° to lixit unavailability P: Hook up lixit, CTM on MH	
11/2/18	5.30					[redacted]
11/16/18	5.52					
11/30/18	5.68					
12/14/18	5.62					

MMU [redacted] F
7yrs 8mos 5.30kg NRL02

Long Term Peanuts
1.00 serving/animal Dose — 1. serving Total Dose

1.00 serving Volume — ① PO Rte — SID Freq — 180 Days
Start 11-16-2018 End 05-14-2019

① LG [redacted] 12/17/18

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations
8/16/18					P: Consider possible dietary supplements,
					consult w/ project staff
8/17/18					start long term fig bars to support
					weight. P: CTM on routine MH &
					routine PKs
8/29/18	5.09				
8/30/18					change to long term version of fig bars
9/5/18		G	G	N	SO: BAR Re: Face trauma (R) side. Noted abrasion
					& bruise to (R) brow ridge. Area appears CAD
					A: Minor trauma healing by 2 int. P: CTMON MH.
9/6/18		G	G	N	SO: BAR Re: (R) side face trauma. Noted mild
					abrasion & bruise to corner of (R) brow ridge,
					abrasion appears CAD, scabbed. A: Minor trauma
					healing by 2 int, no tx needed at this time.
					P: CTM on MH.
9/7/18	5.18				
9-10-18					MOVED TO [redacted] MOVE# 18-530
9/11/18		F	G	N	SO: BAR.
9/12/18		G	G	N	SO: BAR.
9-12-18					MOVED TO [redacted] PER REQUEST
9/21/18	5.16				

MMU [redacted] F
7yrs 5mos 5.02kg NRL02

Fig Newton
2.00 bar/animal Dose — 2. Bar Total Dose

2.00 Bar Volume — PO Rte — SID Freq — 180 Days
Start 08-17-2018 End 02-12-2019

MMU [redacted] F
7yrs 5mos 5.02kg NRL02

Fig Newton
2.00 bar/animal Dose — 2. Bar Total Dose

2.00 Bar Volume — PO Rte — SID Freq — 10 Days
Start 08-17-2018 End 08-26-2018

MMU [redacted] F
7yrs 5mos 5.04kg NRL02

Long Term Fig Bars
2.00 bar/animal Dose — 2. Bar Total Dose

2.00 Bar Volume — PO Rte — SID Freq — 180 Days
Start 08-26-2018 End 02-21-2019

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU[redacted] **California National Primate Research Center** Page # 9

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/24/18 MMU 46132 HO1602-2 / BOX/LOAD & RETURN NRL02						
WT:						
7/24/18		G	G	N	SO: BAR	[redacted]
7/25/18		G	G	N	SO: BAR	
7/26/18		G	G	N	SO: BAR	
7/27/18		G	G	N	SO: BAR	
7/27/18					A: vis healthy P: Return to [redacted] today	
7/27/18					DC → [redacted]	
8/10/18 SD2						
8/10/18					Cardiologist-guided echocardiogram performed due to:	
					pre-shipment / pre-project / clinical	
					Preliminary Results:	
					(Normal) / LVH / Suspect (await final results)	
					Comments: ___ Final Echo Result: _____ **LVH Negative**	[redacted]
8/10/18 MMU[redacted] / 0.7 MLS [redacted] M, D→ 1302					SPF01 W.O. 2437	[redacted]
WT: 4.89	CAGE TIME 2:30 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___					
8/16/18		?	G	N	SO: BAR (P) Re: AFR: poor appetite, losing weight. No chow in cage, ate scratch, ate treats offered. Receives treats per project. No recent morning health poor appetite reports. Moving WNL. NEPD. A: unable to fully assess appetite due to Ø chow in cage.	
8/16/18					P: Ag: Wt decreased over past few months, back to historic wt. range. Stable for past 2 months	[redacted]

Ok [redacted] 8/16/18

Ohs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
7/7/18	(joint)				A: minor facial trauma healing by 2° int	
					P: OTM on MH	[redacted]
7/8/18		G	G	CC	SO: BAR ② Re: Trauma nose. Noted minor abrasion	
					@ bridge of nose. Area appears COI w/ scab & mild	
					erythema present. No swelling or d/c noted.	
					A: Minor trauma healing by 2° int. No tx needed	
					@ this time. P: OTM on MH.	[redacted]
7/13/18	5.16					[redacted]
7.16.18					MOVED TO [redacted] PER REQUEST	[redacted]
7/17/18		FAST	G	CC	SO: BAR	[redacted]
7/18/18		G	G	N	SO: BAR, A: Stable P: OTM as visual buddy.	[redacted]
7/19/18		F	G	N	SO: BAR	[redacted]
7/20/18		FAST	G	N	CT SCAN NRLQI ☒ 0.1mL KG IMA 0.1mL KET IVA	[redacted]
7/20/18 MMU [redacted] LOC [redacted] 0.4 ① TEL MLS KET IM W.O. 2199						[redacted]
WT: CAGE TIME 10:40 15MIN / 30MIN / 45MIN / 1HR 2 1.25HR 2 1.5HR 3 1.75HR ___ 2HR ___						[redacted]
7-21-18		G	G	N	SO: BAR -	[redacted]
7-22-18		G	G	N	SO: BAR -	[redacted]
7/23/18		G	G	N	SO: BAR.	[redacted]
					A: Stable animal P: assess to return to	[redacted]
					home/case	[redacted]
7/24/18						
					SO: Transported to [redacted] for MRI, project _____	
					WO# 2243 Sedated with ketamine 0.6 mls,	
					Animal was / was not placed in Steriotax,	
					performed MRI per protocol, recovered fully,	
					returned to CNPRC home cage	
					Animal did/did not receive Ketoprofen IM 0.25mls	
					head circum. 29cm.	[redacted]

① entry should be TEL 4-20-18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
6/1/18		G	G	N	SO: BAR OPM: RHD3 trauma, animal	
					using hand normally, digit 1/10	
					is scabbed with no swelling or erythema	
					A: Resolving digit trauma	
					P: VB ✓ 1-2-6/wk, assess to	[redacted]
					D/C next wk	[redacted]
6-4-18		G	G	N	SO BAR (P) OP: RHD3 Trauma; Digit C+D,	
					Animal using Digit WNL – NEPD.	
					A: Trauma resolved. P: D/C from OPM.	
					✓ D/C ✓ Snomed ✓ Recharge	
6-5-18		F	G	N	SO: BAR (P) RE: Poor App & chow; Animal	
					Ate 150cals of produce according to Project	
					tech. Animal is active with NEPD.	
					A: Fair Appetite – Stable Animal.	
					P: CTM on M.H	[redacted]
6/6/18					move to [redacted] per move 18-330	[redacted]
6/9/18		G	G	CC	SO: BAR (P) RE: Face (R) side trauma. Noted sm. superfi-	
					cial abrasion to (R) bottom eye ridge. Area appears	
					C+D. A: Minor trauma healing by 2int. notx indicated	
					@ this time. P: CTM on MH	[redacted]
7-1-18		G	G	CC	SO: BAR, Re: Poor appetite. Ate 3/9 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	
						[redacted]
7/7/18		G	G	CC	SO: BAR Re: facial trauma unchanged. Mild abrasions	
					to bridge of nose C+D, scabbed w/ mild erythema	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
5/29/18					daily, consider further intervention if animal appears uncomfortable or more trauma occurs	[redacted]
					Admit ⊗ Prob. Sheet ⊗	[redacted]
5/30/18		G	G	N	SO: OPM: RHD3 trauma. RHD3 abrasion/nail appears CAD, no active bleeding. MMU using hand/digit WNL w/ sl. favoring. Readily took treats w/ (R) hand. A: Healing digit trauma. P: CTM on OP + MH.	[redacted]
5/31/18		G	G	N	SO: BAR OPM: RHD3 trauma + Re: (R) side finger trauma. Digit appears CAD, noted granulation tissue over abraded finger tip. A: Healing digit by 2° int. P: CTM on OP+MH daily.	[redacted]
					SO: BAR RE: Blood observed dripping from his underside. No observed blood or wound on back side or digits. No blood noticed in cage. (R) HD3 CAD A: stable animal, healing (R) HD3 P: cont tx as planned, CTM on OP+MH Daily consider D/C ~6/4	[redacted] ①
6/1/18	S.1					

MMU [redacted] F
7yrs 2mos 5.60kg NRL02

Meloxicam 5 mg/mL
0.20 mg/kg Dose — 1.1 mg Total Dose
0.22 mLs Volume — SC Rte — SID Freq — 1 Days
Start 05-30-2018 End 05-30-2018

Meloxicam 5 mg/mL
0.10 mg/kg Dose — .6 mg Total Dose
0.11 mLs Volume — SC Rte — SID Freq — 2 Days
Start 05-31-2018 End 06-01-2018

MMU [redacted] F
7yrs 2mos 5.60kg NRL02

Meloxicam 1.5 mg/mL
0.10 mg/kg Dose — .6 mg Total Dose
0.37 mLs Volume — PO Rte — SID Freq — 3 Days
Start 05-31-2018 End 06-02-2018
[redacted]
Modified

① EG, incorrect record [redacted] 6/1/18

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/9/18	cont				P: CTM on MH per DVM	[redacted]
3/10/18		F	G	CC	SO: BAR (P) Re: Poor appetite. Per feeding chart	
					MMH ate 3 chow overnight. MMH BAR, AHS: WNL	
					Ate fresh fruit. A: Fair appetite. P: CTM on MH.	[redacted]
3/23/18	SO					
3/23/18		F	G	N	SO: BAR (P) Re: Poor appetite. Per feeding chart	
					MMH ate 4 chow + fresh fruit, banana chips, raisins	
					+ seeds. A: Fair - good appetite. P: CTM on MH.	[redacted]
3/24/18		P	G	N	SO: BAR (P) Re: Poor appetite. Ate 1 chow overnight	
					readily ate apricots (pieces). A: Poor appetite. 1st	
					recent confirmed report. P: CTM on MH.	[redacted]
4/6/18	5.06				0.5cc Ket; Bled 3cc SB; TB TEST (LEFT EYE) / RIGHT EYE 24HR__, 48HR__, 72HR__	
					ANIMAL MONITORED	
					UNTIL RECOVERED	[redacted]
4/7/18		P	G	N	SO: BAR, Re: Poor App (7 chow) Animal	
					would not enter pen to fully	
					assess appetite, fasted for RN.	
					A: Poor Appetite, unable to fully	
					assess Appetite	
					P: CTM on MH.	[redacted]
4/20/18	SS					[redacted]
5/4/18	SS					
5/18/18	SO					
5/29/18					SO: BAR AAR: digit trauma; RHD3 tip of finger is	
					missing, nail partially avulsed, no active bleeding,	
					no bone exposed, nail bed still covered, no attention	
					to wound, moving normally in cage. A: minor digit	
					trauma, no repair needed at this time. P: vis ✓	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 4

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
1/11/18					MMU 46132 AB5013-55 / 0.5 MLS KET IM, BLED 3 MLS, D→1302 WO#4359 NRL02	
	WT: 5.07				CAGE TIME: 9:15 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75 ___ 2HR ___	[redacted]
1/11/18					X pre-project physical __ pre-shipment physical __ weaning physical See associated P.E. sheet for additional information.	[redacted]
1-19-18					moved → [redacted]	[redacted]
2-6-18	4.95				Box wt	[redacted]
2/13/18					moved → [redacted] per NO# 18-099	[redacted]
2/23/18	5.1				Box weight	[redacted]
3/2/18		G	G	N	SO: BAR Re: Poor appetite. Ate 7 chow + fresh fruit.	
					given by lab staff. MMU readily ate apple pieces.	
					A: Good appetite. P: CTM on MH.	[redacted]
3/5/18		Fair	G	N	SO: BAR (P) Re: Poor Appetite.	
					Ate fresh produce given by lab	
					staff on supplemental training	
					program. Active. NFPD. Weight	
					increasing, ate total of 8 chow	
					previous day.	
					A: Fair-(Good) appetite w/ weight	
					P: CTM on MH	[redacted]
3/9/18	4.90				Box weight	[redacted]
3/9/18		F	G	N	SO: BAR, Re: Poor App (10 chow)	
					7 chow in cage, ate supps, fearful	
					training supps. Yesterday ate 4 chow	
					Normal stool in cage. NFPD.	
					A: Poor App for chow, good app supps	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 12/9/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL

Negative TB Test Date: 12/9/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: 5.75 Temp: 102.7 HR: 180 RR: 50 BCS: 2.0+ Gender: M/F Comments:

Integument	NAO	A	NE	Mild patchy arms + legs
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	clear
Abdominal Palpation	NAO	A	NE	Sl. gas in intestines
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	Mensing

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: various traumas - Resolved; Poor App - Resolved (2019).

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 CBC ECG CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - NR, Chem - LIR

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
____ Approved for project pending lab review
X Approved for shipment
____ Stable weanling
____ Other

Comments:

Examining Veterinarian: [redacted] Date: 12/11/20

Original– Animal's record Bottom copy - Requestor [redacted] PC17, Rev. 1/14/14

3548

☐ VIRAL PRECAUTION

BZ59, NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DAT[redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

12, 9, 20
DATE OF SAMPLE

F 9 YR 8 MO 5.9 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
pre-shipment

HOSPITALIZED NO ☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☐ ICTERIC☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	146	mM/L	15		CPK (S,HP)	720	U/L	25		pH		
2		POTASSIUM (S,HP)	3.3	mM/L	16		ALK PHOS (S,HP)	134	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	53	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	22	mM/L	18		LDH (S,HP)	290	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	20		19		CHOLESTEROL (S,HP)	140	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.4	mg/dl	20		TRIGLYCERIDE (S,HP)	84	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	87	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.4	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.3	g/dl										
13		ALT (S,HP)	40	U/L										
14		AST (S,HP)	33	U/L										

REPORTED BY [redacted] DATE: 12/10/20

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE - ANIMAL'S CHART YELLOW - LABORATORY PINK - REQUESTOR

5744

☐ VIRAL PRECAUTION

B259 / NRL03
I.D. / PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR / REQUESTOR

HEMATOLOGY

12 / 9 / 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM / CAGE

F 9 YR 8 MO 5.9 KG
SEX / AGE / WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-shipment

HOSPITALIZED ☐NO ☐YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☐ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.7	X 10^3/ µl
RBC	5.36	X 10^6/ µl
HEMOGLOBIN	13.3	gm/dl
HEMATOCRIT	40.8	%
MCV	76	fl
MCH	24.8	pg
MCHC	32.6	pg/fl
PLATELETS	2.53	X 10^5/ µl

☐ RETICULOCYTES ____ % ____ X 10^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.6 gm/dl

PLASMA COLOR:
- ☑ NO ABNORMALITIES
- ☐ HEMOLYZED
- ☐ ICTERIC
- ☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.7 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	35	1995
LYMPHOCYTES	61	3477
MONOCYTES	3	171
EOSINOPHILS	1	57
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
- ☑ ADEQUATE
- ☐ DECREASED ☐+1 ☐+2 ☐+3
- ☐ INCREASED ☐+1 ☐+2 ☐+3
- ☐ LARGE PLATELETS
- ☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
- ☑ ESSENTIALLY NORMAL
- ☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
- ☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
- ☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 12/9/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

4416

☐ VIRAL PRECAUTION

B259 NRL Ø3
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

MMU [redacted]
ANIMAL I.D.

9 / 6 / 19
DATE OF SAMPLE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

F 8 YR 5 MO 5.31 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☐ NO ☐ YES ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= / µl
CD8= / µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	9.0	X 10 ^3/ µl
RBC	5.95	X 10 ^6/ µl
HEMOGLOBIN	14.6	gm/dl
HEMATOCRIT	45.4	%
MCV	76	fl
MCH	24.5	pg
MCHC	32.0	pg/fl
PLATELETS	2.64	X 10 ^5/ µl
☐ RETICULOCYTES	%	X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.9	gm/dl
☐ FIBRINOGEN	200	mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 9.0 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	77	6930
LYMPHOCYTES	22	1980
MONOCYTES	1	90
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

[redacted] 9-6-19

[redacted] 9-6-19

REPORTED BY [redacted]

REPORT DATE: 9-6-19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

1790

☐ VIRAL PRECAUTION

B259, NRL43
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

9 / 6 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 8 YR 5 MO 5.3 KG
SEX AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID _____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ _____HOURS COMMENTS: _____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X
HEMOLYZED ☐
ICTERIC ☐
LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	443	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	123	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	110	mM/L	17		GGT (S,HP)	57	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	25	mM/L	18		LDH (S,HP)	190	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	13		19		CHOLESTEROL (S,HP)	144	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	1.8	mg/dl	20		TRIGLYCERIDE (S,HP)	60	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.9	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	16	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	69	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.4	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.2	g/dl										
13		ALT (S,HP)	40	U/L										
14		AST (S,HP)	26	U/L										

REPORTED BY [redacted] DATE: 9/6/19

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

716

☐ VIRAL PRECAUTION

B759, NRLV2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

4, 17, 19
DATE OF SAMPLE

F 8 YR 1 MO 5.30 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: Low BCS / poor appt. / rev / lab

HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☐ HEMOLYZED ☒ SL ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ✓ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	142	mM/L	15		CPK (S,HP)	542	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	169	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	109	mM/L	17		GGT (S,HP)	60	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	21	mM/L	18		LDH (S,HP)	229	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	125	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.0	mg/dl	20		TRIGLYCERIDE (S,HP)	164	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	19	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	90	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.3	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.3	g/dl										
13		ALT (S,HP)	32	U/L										
14		AST (S,HP)	29	U/L										

REPORTED BY [redacted] DATE: 4-18-19

PERFORMED BY: CNPRC ☑ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1504

6259 / NRL02
I.D. / PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR / REQUESTOR

3 / 25 / 19
DATE OF SAMPLE

ANIMAL DAT[redacted]
ROOM / CAGE

F — SEX
8 YR 1 MO — AGE
9.8 KG — WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ☒ COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

wt loss, low BCS

HOSPITALIZED ☒ NO ☐ YES ____ ROOM / CAGE

PRIOR THERAPY ☒ NO ☐ YES Supplemental food

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= / µl
CD8= / µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.1	X 10 ^3/ µl
RBC	6.29	X 10 ^6/ µl
HEMOGLOBIN	15.4	gm/dl
HEMATOCRIT	47.6	%
MCV	76	fl
MCH	24.5	pg
MCHC	32.3	pg/fl
PLATELETS	3.35	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 8.3 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.1 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	53	2703
LYMPHOCYTES	43	2193
MONOCYTES	2	102
EOSINOPHILS	2	102
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

3/25/19 [redacted]

3/25/19 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 3/25/19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

535

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

B259, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

3/25/19
DATE OF SAMPLE

ANIMAL DAT[redacted]
ROOM CAGE

F 8 YR 1 MO 4.8 KG
SEX AGE WEIGHT

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: wt. loss, low BCS

HOSPITALIZED ~~NO~~ ☐ YES ☐ ____ ROOM ____ CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS: supplemental food

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ ~~CHEM 20~~ ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	140	mM/L	15		CPK (S,HP)	693	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	148	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	111	mM/L	17		GGT (S,HP)	63	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	26	mM/L	18		LDH (S,HP)	442	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	7		19		CHOLESTEROL (S,HP)	146	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.1	mg/dl	20		TRIGLYCERIDE (S,HP)	35	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.8	mg/dl	21		BILI TOTAL (S,HP)	0.6	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	19	mg/dl	22		DIRECT	0.2	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.7	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	57	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.9	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.9	g/dl										
13		ALT (S,HP)	44	U/L										
14		AST (S,HP)	41	U/L										

REPORTED BY [redacted] DATE: 3/25/19

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: MMU-[redacted] Home Room: [redacted] Date: 7/24/18
Wt (kg): 5.18 Age: 7yr Sex: M/F Procedure: [redacted] MRI ET Tube size: 5mm
Investigator: [redacted] W/O# 2243 Project: [redacted] IV Catheter Placement: O Saphen — not functional Rec to 92C IV Avic

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.4ml/k	IM	~9:15a	Ketoprofen	0.25ml/k	IM	~9:40a
Dexmedetomidine	0.2mls	IM	~9:30a				
Atipamazole	0.2mls	IM	~9:40a				

Fluid Type LRS **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR-**0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP --

Time:	9:23	10am
Temp:		
160		
150		
140		
135		
130	•	
125		
120		
115		
110		
105		•
100	✓	✓
95		
90		
85		
80		
75		
70		
65		
60		
55		
50	X	X
45		
40		
35	O	O
30		
25		
20		
15		
10		
SIGH		
Fluids total/rate	TOTAL: ~50mls	not functioning
CRI: N/A		
Iso Fl (%)/ Oxygen (L)	1.0% / 1.4	

Completed

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

163

BZ59, NRLD2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

NMU [redacted]
ANIMAL I.D.

1 / 11 / 18
DATE OF SAMPLE

F SEX | 6 YR 10 MO AGE | 5.28 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐ NO ☐ YES ROOM - CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	4.7	X 10 ^3/ µl
RBC	5.67	X 10 ^6/ µl
HEMOGLOBIN	13.7	gm/dl
HEMATOCRIT	43.2	%
MCV	76	fl
MCH	24.1	pg
MCHC	31.7	pg/fl
PLATELETS	3.50	X 10 ^5/ µl
☐ RETICULOCYTES	%	____ X 10 ^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.4	gm/dl
☐ FIBRINOGEN	200	mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 4.7 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	57	2679
LYMPHOCYTES	41	1927
MONOCYTES	2	94
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

1/11/18 [redacted]

1/11/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 1-11-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

59

☐ VIRAL PRECAUTION

BZ59, NRL02
I.D. PROJECT CODE

MMU [redacted]
ANIMAL I.D.

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

[redacted]
INVESTIGATOR REQUESTOR

1, 11, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 6 YR 10 MO 5.28 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	145	mM/L	15		CPK (S,HP)	391	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	138	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	49	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	22	mM/L	18		LDH (S,HP)	252	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	19		19		CHOLESTEROL (S,HP)	101	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.5	mg/dl	20		TRIGLYCERIDE (S,HP)	58	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.8	mg/dl	21		BILI TOTAL (S,HP)	0.4	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	22	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	76	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.8	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.5	g/dl										
13		ALT (S,HP)	49	U/L										
14		AST (S,HP)	46	U/L										

REPORTED BY [redacted] DATE: 1-11-18

PERFORMED BY: CNPRC ☑ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE - ANIMAL'S CHART YELLOW - LABORATORY PINK - REQUESTOR

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 1/11/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: NRU02 nuno Study

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 5.07 Temp: 101.0 HR: 172 RR: 32 BCS: 2.0- Gender: M (F) Comments:

Integument	(NAO)	A	NE	thin haircoat lower legs
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	(NAO)	A	NE	
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 1/11/18 Dates Reviewed: all Reviewers initials: [redacted]

Comments: unremarkable; thin body condition on LTBB to support wt gain

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 1/11/18 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: NSF

Imaging studies: (to be completed by Veterinary staff)

Date: 1/11/18 Radiographs: U/S exam: echo

Comments: no evidence of LVH Reviewers initials: [redacted]

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
X Approved for project pending lab review
____ Approved for shipment
____ Stable weanling
____ Other

Comments: animal is quite thin, consider re✓ BCS prior to surgery Blood work LN1

Examining Veterinar[redacted] Date: 1/11/18

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

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CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

6259, NRLK2
I.D. PROJECT CODE

MMLL [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

1, 11, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F SEX | 6 YR 10 MO AGE | 5.25 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	4.7	X 10 ^3/ µl
RBC	5.67	X 10 ^6/ µl
HEMOGLOBIN	13.7	gm/dl
HEMATOCRIT	43.2	%
MCV	76	fl
MCH	24.1	pg
MCHC	31.7	pg/fl
PLATELETS	3.50	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.4 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 4.7 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	57	2679
LYMPHOCYTES	41	1927
MONOCYTES	2	94
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

1/11/18 [redacted]

1/11/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 1-11-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

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☐ VIRAL PRECAUTION

B259 / NRLV2
I.D. PROJECT CODE

MNLL[redacted]
ANIMAL I.D.

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

[redacted]
INVESTIGATOR REQUESTOR

1 / 11 / 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F 6 YR 10 MO 5.28 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	391	U/L	25		pH		
2		POTASSIUM (S,HP)	3.7	mM/L	16		ALK PHOS (S,HP)	138	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	49	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	22	mM/L	18		LDH (S,HP)	252	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	19		19		CHOLESTEROL (S,HP)	101	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.5	mg/dl	20		TRIGLYCERIDE (S,HP)	58	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.8	mg/dl	21		BILI TOTAL (S,HP)	0.4	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	22	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	76	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.8	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.5	g/dl										
13		ALT (S,HP)	49	U/L										
14		AST (S,HP)	46	U/L										

REPORTED BY [redacted] DATE: 1-11-18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 40

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/9/20		P/G	G	cc	S: BAN, Re: Poor App (2 chart) Did not eat fig, ate peanuts, ate produce readily ate treats. Receives copious treats per project. NEPD.	
					O: Confirmed poor App for chow 1st recent report.	
					P: Vet to evaluate ~11/10 CTM on MH	[redacted]
11/13/20	5.86				Box weight	[redacted]
12/9/20					__pre-project physical ✓pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	
12.9.20	5.75				MMU [redacted] NRL03 W.O 3857 0.6 MLS KET IM / D→ 1310 / BLED 3 MLS TB TEST RIGHT EYE 24HR ✓ 48HR ✓ 72HR ✓ CAGE TIME: 2:30 15 MIN ___ 20 MIN 3 ___ 45 MIN ___ 60MIN ___ 75MIN ___ 1.5HR ___ 90MIN ___ 2HR ___	[redacted]
12/10/20	MMU [redacted] 9yrs 9mos 5.61kg F NRL03 **Long Term Bars** 1.00 bar/animal Dose — 1. Bar Total Dose 1.00 Bar Volume — PO Rte, SID Freq, 210 Days Start 05-14-2020 End 12-09-2020 Extended, Ended				MMU [redacted] 9yrs 9mos 5.66kg F NRL03 **Long Term Fig Bars** 1.00 bar/animal Dose — 1. Bar Total Dose 1.00 Bar Volume — PO Rte, SID Freq, 180 Days Start 12-09-2020 End 06-06-2021 A: wt stable w/ supps. P: Switch to FB, due to Bars being discontinued. CTM on routine MH. CTM wts via project.	[redacted]
12/14/20					Animal shipped to Neuralink	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8/22/20		G	G	CC	SO: BAR, RE: Vomit. Animal sedated yesterday for routine PE A: suspect emesis secondary to sedation P: CTM on MH	[redacted]
9/30/20		G	G	N	SO: BAR Re: poor app ; ate bars & peanuts, 5 chow remaining, NEPD A: 1st recent report for poor app P: CTM on routine MH	[redacted]
9/20/20		G	G	N	SO: BAR Re: PA; ate supps & 6 chow in AM per food log. A: 1st recent PA report. P: CTM on MH	[redacted]
9/21/20		F	G	N	SO: BAR Re: poor appetite - Animal seated eating bars this am. Made cute 1/2 bars available. intake / many changes in the room. P: CTM via MH & wts	[redacted]
10/4/20		F	G	N	SO: BAR Re: poor app ; readily ate grapes & banana offered, adequate stool volume A: 1st report for poor app in over a week P: CTM on routine MH, consider wt rev if reports persist	[redacted]
10/16/20	5.80				Box Weight	[redacted]
10/25/20		G	G	N	SO: BAR , Re: Poor appetite. Ate 6 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	wt. ↑, NEPD. [redacted]
10/30/20	5.71				Box Weight	[redacted]
11/2/20					MMU [redacted] F 9yrs 7mos 5.61kg NRL03 Long Term Bars 1.00 bar/animal Dose 1. Bar Total Dose 1.00 Bar Volume PO Rte SID Freq 360 Days Start 05-14-2020 End 05-08-2021 Extended MMU [redacted] F 9yrs 7mos 5.61kg NRL03 Long Term Peanuts 1.00 serving/animal Dose 1. serving Total Dose 1.00 serving Volume PO Rte SID Freq 360 Days Start 05-14-2020 End 05-08-2021 Extended	A: wt Stable w/ supps P: Extend LT supps Cont to monitor wts via project + CTM on MH [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5/28/20		G	G	N	SO: BAR (P) RE: BLOOD UND; 1 DROP BLOOD	
					IN CAGE. SMALL AMT. BLOOD @ VULVA.	
					NEPD	
					A: SUSPECT NORMAL MENSE	
					P: CTM ON MH	[redacted]
5/29/20	5.76				BOX Weight	[redacted]
6/26/20	5.89				Box weight	[redacted]
7/5/20		G	G	CC	SO: BAR, (P) RE: R face trauma; pinpoint, minor lesion	
					below OD, v. mild eryth., & swelling. NEPD, & attn. paid.	
					A: minor facial trauma healing 2° int., & tx @ this time.	
					P: CTM on MH.	[redacted]
7/24/20	6.07				Box Weight	[redacted]
8/9/20		F	G	N	SO: BAR, paired RE: poor app; 7 whole chow left,	
					ate bars & peanuts, readily ate treats A: 1st recent	
					report for poor app P: CTM on routine MH	[redacted]
8/10/20		G	G	N	OD: BAR, RE: PA; 2 whole, 1 part. chow remain, supps	
					consumed.	
					A: 2nd recent PA report, gd. ↑ in wt. trend.	
					P: CTM on MH.	[redacted]
					[redacted]	
8-21-20	5.50				___mls Ket. BCS= 2 [redacted] 8/21/2020	
					Tartar: 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: R L Eye 5.50 kg 24hr___ 48hr___ 72hr___	
					mild inguinal derm. clean w/DNS,	
					apply ZnO_3, good hair coat	
					ANIMAL MONITORED UNTIL RECOVERED	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/26/20	cont				2x/mo wts. CTM w/ project and on MH.	[redacted]
3/6/20	5.4				Box weight	[redacted]
4/1/20		G	G	N	SO: BAR, Re: Poor App (7 chow) to partial chow in cage, ate supps.	
					A: Good appetite on Supps, 1st recent report of poor appetite	
					P: Continue long term supps CTM on MH	[redacted]
4/4/20		G	G	N	SO: BAR Re: poor app; 3 chow left post a.m. feeding. Ate supps & was offered treats. NERD	
					A: 2nd poor app Report	
					P: CTM on MH	[redacted]
4/22/20	6.0				Box Weight	[redacted]
5/1/20	5.59				Box Weight	[redacted]
5/10/20		G	G	N/SS	SO: BAR, Re: Poor appetite. Ate ____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	all supps consumed. active + readily ate treats. & chow remaining. [redacted]
5/12/20	5.61				Box wt.	[redacted]
5/12/20					A: wt stable w/ overall ↑ trend	
					P: cont. LT supps, CTM on MH	[redacted]

MMU [redacted] F
9yrs 2mos 5.61kg NRL03

Long Term Peanuts
1.00 serving/animal Dose — 1. serving Total Dose

1.00 serving Volume — PO Rte — SID Freq — 180 Days
Start 05-14-2020 End 11-09-2020

1.00 bar/animal Dose — 1. Bar Total Dose

1.00 Bar Volume — PO Rte — SID Freq — 180 Days
Start 05-14-2020 End 11-09-2020

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] **California National Primate Research Center** Page # 36

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
~~2-7-20~~ 5.20					~~So: LTOP~~ ①	[redacted]
2/19/20					So: LTOP: Low BCS/PA No recent	
					reports of PA. Small wt gain over	
	①				1 mo. Currently on LT-supps.	
					A: Stable MMU on LT-Supps.	
					P: ~~D/c from LTOP~~ ① cont LT-supps	
					and ~~Monthly~~ Routine ② wts, CTM on LTOP	[redacted]
					~~Biweekly-Monthly~~ ① Routine = Biweekly-Monthly	
					wts	[redacted]
2-21-20	5.17 ② 15.85				[redacted] [redacted] **2/21/2020**	
					~~8~~ mls Ket. BCS= 1.5 Tartar: 0 1 2 3 4 Teeth Scaled Y N	[redacted]
					TB Test: R Eye 24hr — 48hr — 72hr —	
					w/. 5.17 **ANIMAL MONITORED UNTIL RECOVERED**	

PHYSICAL EXAM [redacted]

Date 2-21-20 Weight 5.17 BCS 1.5

HR 144 RR 42 TEMP 100.5 ☐ **Project Code**

1. Integument WNL ☑ **Shave Tattoo**
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation N/A

Animal may be unpaired or individually housed while receiving veterinary care [redacted]

2/26/20					So: MMU Stable wt w/ BCS 1.5.	
					Currently on LT-supps.	
					A: Stable wt w/ low BCS	
					P: D/c from LTOP, cont LT-supps and	

① RE [redacted] 2/19/20 ② RE Should Be 5.17

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, ~~SS= Semi-Solid~~, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/27/19					on LTP & as reported	[redacted]
1-3-20		P/F	G	CC	SO BAR, RE: poor app 6 chow; Animal Ate 1/7	
					chow plus forage and supps. Also Ate 203 Extra	
					calories from training treats. Good Appetite for	
					Supps. Animal Active with NEPD.	
					A: poor → Fair appetite.	
					P: ctm on MH / LTP	[redacted]
1-8-20		P/F	G	N	SO BAR, RE: poor App 6 chow: Animal Ate 1/7	
					Chow plus forage and supps. Also Ate All	
					training treats offered.	
					A: poor → fair app.	
					P: ctm on MH / LTP.	[redacted]
1-10-20	5.1					[redacted]
1-10-20		P/F	G	N	SO BAR: RE: poor app 6 chow: Animal Ate 1/7	
					chow plus supps and forage. Active NEPD.	
					A: poor → fair app.	
					P: ctm on MH.	[redacted]
1/24/20		F	G	N	SO: BAR, (P) RE: POOR app; ate 2 chow per food log.	
					MMu pright + active. suspect supps consumed.	
					A: 1st recent poor app report, sl. wt ↑.	[redacted]
					P: CTM on MH + LTDP.	[redacted]
1/24/20	5.0					[redacted]
1-28-20		P/F	G	CC	SO Bar RE: poor app 6 chow: Animal Ate 1/7 chow	
					plus supps and forage. Also Ate training treats	
					from lab. Good app for supps. Unable to	
					assess stool due to clean cage.	
					A: poor → fair Appetite. P: ctm on MH / LTDP.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] California National Primate Research Center Page # 34

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11-25-19		P/F	G	CC	SO BAR (P), RE: poor app 6 chow: Animal Ate	
					4 chow by observations. Ate All treats offered.	
					Active with NEPD.	
					A: ① Poor - fair app.	
					P: ctm on MH.	[redacted]
11-27-19	5.0					[redacted]
12/10/19		G	G	N	SO: BAR (r) LTOP: low BCS / poor app; active in	
					enclosure, threatening front of cage. Ate 4/7	
					chow in AM. Pink MM caseside BCS - 1.5.	
					A: Intermittent reports of PA, wt w/in historic	
					range. P: cont. 2x/month wt's, cont w	
					supps, CTM on LTOP + routine MH.	
12/3/19	5.0				Box weight	[redacted]
12-13-19		P/F	G	CC	SO BAR (P) RE: poor app 6 chow. Animal Ate 1/7	
					chow plus supps and 190 cals of treats.	
					Animal has taste for supps and treats over	
					chow. Wt appears stable. Animal Active	
					with NEPD. A: Good calorie ~~intake~~ ② intake.	
					P: ctm on MH.	[redacted]
(B) 11-14-19		P/F	G	N	SO BAR (P) RE: poor app 7 chow. Animal Ate	
					0/7 chow, ~~Ate~~ All supps plus training treats.	
					Active with NEPD.	
					A: Poor → fair app. P: ctm on MH.	[redacted]
10-27-19	5.0					[redacted]
12/29/19		?	G	N	SO: BAR, paired RE: poor app; no chow or supps in	
					cage at observation, ate grapes offered, per food	
					log ate 1 chow 12/28 and 2 chow this morning	
					A: on LTP for poor appetite and low BCS P: CTM	[redacted]

① EE [redacted] 1-15-19. ② SP [redacted] 12-13-19 ③ L.E. [redacted] 12-23-19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/9/19		F	G	N	SO: BAR (P) RE: poor app; FEED LG	
					REPORTS Ø CHOW CONSUMED. ATE ALL SUPPS,	
					READILY ATE BANANA, SPINACH & APPLE.	
					NEPD	
					A: poor app for CHOW, GOOD for SUPPS.	
					P: CTM on MH/LTOP. CONSIDER ADDITIONAL	
					SUPPS / Tx IF poor appp PERSISTS. AWAIT	
					NEXT WT RE ✓	[redacted]
11-12-19		P/F	G	N	SO: BAR , Re: Poor appetite. Ate 1 chow and did/did not eat forage, did/did not eat fresh fruit / treats. Animal Getting multiple training treats.	
					A: Poor, Fair, Good appetite. ___ recent confirmed report.	
					P: CTM on MH / OP	[redacted]
11/14/19	4.9					[redacted]
11-19-19		P/F	G	N	SO BAR, RE: Poor App 7chow: Did not eat chow,	
					Ate All supps plus large or 2 large bananas.	
					A: Poor → fair appetite.	
					P: ctm on MH.	[redacted]
11/22/19		P/G	G	N	SO: BAR, (P), Re: Poor App (7chow) Ate 3/14	
					chow per feeding long. Ate Supps.	
					Per SPA ate all produce. Animal receives	
					copius treats per project. Due to recent	
					room move animal lost weight 10/18	
					5.32 kg to 11/14 4.90 kg. Project	
					providing Hi Calorie treats. Copius.	
					A: Poor App for chow good for supps	
					mild wt loss 2° to room move	
					P: CTM on LTOP/MH	
					Continue Supps, CTM wt	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊗	Hydration (G, F, P) ⊗	Stool (N, SS, L, B) ⊗	Observations	Initials
10/25/19		G	G	N	SO: BAR OP: LOW BCS, POOR APP, LHDS STS;	
					NO RECENT REPORTS FOR POOR APP. RENDERING	
					ATE TREATS. LHDS CDI & HERNED.	
					A: STABLE WT, GOOD APP, RESOLVED LAC	
					P: D/C TO LTOP, CTM ON MH	
					[redacted]	
					– ⊗ D/C ⊗ Snomed ⊗ Recharge –	
						[redacted]
11/5/19					MMU [redacted] moved to [redacted] MOVE # 19-780	[redacted]
11/6/19		P	G	N	SO: BAR (P) RE: POOR APP; 6 CHOW LEFT,	
					ATE 1 WHOLE. ATE SUPPS. NEPD, MOVING	
					WELL.	
					A: 1ST RECENT REPORT FOR POOR APP, SUSPECT	
					2° TO RECENT MOVE	
					P: CTM ON MH	[redacted]
11/7/19		P	G	CC	SO: BAR (P) RE: POOR APP; FEED LOG	
					STATES 2/7 CHOW CONSUMED. ATE SUPPS.	
					NEPD	
					A: 2nd REPORT FOR POOR APP, SUSPECT 2°	
					TO RECENT MOVE	
					P: CTM ON MH	[redacted]
11/8/19		P/F	G	CC	SO: BAR (P), RE: Poor App (7 chow). Ate	
					0 chow per feeding log. Ate treats	
					ate supps, none in cage. Receives treats per project	
					A: 3rd report for poor App, continued	
					for chow, good for supps, stable wt	
					P: Await wt J's, Continue long term	
					supps, CTM on MH	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/16/19		G	G	N	SO: BAR (P) OP: LHDS STS; LHDS IS CDI	
					W/ VERY MILD SCABBING. Ø SWELLING OR	
					ERYTHEMA	
					A&P: SEE 10/15 ENTRY	[redacted]
10/17/19					SO: Animal is currently not on MER	
					cale. Has a BCS of 2. She receives	
					7/7 bxc plus ~100-200 kcal of produce	
					per day. Does not eat more biscuits	
					even if provided extra chow	
					currently paired	[redacted]
10/17/19					A: Resolving hand laceration, pt stable	
					P: VIS ✓ DX (WK), assess to D/C	
					next week if hand continues healing	
					well or assess to D/C to IPOP if	
					not remaining stable	[redacted]
10/18/19	5.32					[redacted]
10/18/19		G	G	N	SO: BAR (P) OP: LHDS STS; LHDS IS CDD	
					& HEALING WELL. Ø SWELLING, ERYTHEMA OR	
					EVIDENCE OF DEHISCENCE. NEPD, GRIPPING WELL.	
					A/P: SEE 10/17	[redacted]
10/21/19		G	G	N	SO: BAR2, (P), OPM: LOW BCS/POOR APP/	
					LHDS trauma. LHDS resolved, good	
					use. Ate supps, no chow log up.	
					No chow in cage. Ate treats.	[redacted]
10/22/19		F	G	N	SO: BAR, (P), OPM; LOW BCS/Poor App. Re:	
					Poor App (no chow) Ate 3/4 chow, ate scratch	
					and treats. Recieves copius treats per project.	
					A: Fair appetite on supps. P: See 10/17 per DVM	[redacted]

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/11/19		G	G	N	S: BAR (P) O: LHDS STS; STS AND CDI	
					W/ Ø ENYTHEMA OR SWELLING. ANIMAL IS	
					GRIPPING & MOVING WELL W/NEPD.	
					A: LHDS LAC HEALING BY 1° INT.	
					P: CTM or OP DAILY	[redacted]
10/12/19		G	G	N	S: BAR (P) O: LHDS STS; STS AND CDI &	
					SCABBED. Ø SWELLING OR ENYTHEMA. NEPD,	
					MOVING WELL	[redacted]
10/13/19		G	G	N	S: BAR (P) O: LHDS STS; STS AND CDI W/	
					VERY MILD SCABBING. Ø SWELLING OR	
					ENYTHEMA. NEPD, MOVING WELL	[redacted]
10/14/19		G	G	N	S: BAR (P) O: LOW BCS / POOR App.	
					Ate all chow and supps. NO STS vis	
					in LHDS: C+D, normal use.	
					A: LHDS healing by 2° INT w/	
					good use, wt stable on Supps	
					P: CTM on OPM daily assess to	
					↓ checks if stable, continue Tx.	[redacted]
10/15/19		F	G	N	S: BAR (P), O: LOW BCS/Poor App.	
					No sts visualized in (L) hand. Wound	
					C+D w/ good use, skin edges not apposed.	
					Hard to visualize. NEPD. Ate treats	
					Ate supps.	
					A: LHDS healing by 2° INT w/ good	
					use, wt stable on supps	
					P: CTM on OPM 3x/week	
					Continue Supps, Await project Plan	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/8/19					A: Infected LHD4 lac? P: Sedate in am to clean thoroughly & eval for further tx. Cont current tx & ask staff to trim NTZ puffs this afternoon – don't want to sedate twice in the day today. Animal is on analgesics / antibiotics	[redacted]
10/9/19					A: SO: PAL Sedated w/ 0.5 mls ket IM & 0.2 mls dex/atrop. IM. Thoroughly flushed LHD4 lac thoroughly w/ copious amts of DNFs. Then sx scrubbed & prepped area. Closed lac w/ 3x4.0 vicryl sq inverting sutures. Unable to place more due to fragile surrounding tissue. Applied sx glue to incision tightly & after drying applied new skin over area. Placed an adaptic bdg to protect wound. Performed cursory RE – all WNL, sh. tartar polished teeth. A: Reclosed LHD4 lac & bdg. P: Cont. Ketoprofen today/tomorrow. Give 2nd dose of simbadol tomorrow. Started CEFA q 3 hrs ✓ bdg 10/10, D bdg +/- replace on 10/11	[redacted]
10/10/19		G	G	N	SO: BAR OP: LHD5 STS; RE: BANDAGE REMOVED; ANIMAL HAS REMOVED BDG. LHD5 STS ARE CDI W/ NO EVIDENCE OF PICKING. A: LHD5 STS P: CTM DAILY ON OP, ASSESS TO BDG PRN	[redacted]

MMU [redacted] F
8yrs 7mos 5.42kg NRL03

Ceftiofur Crystalline Fr
20.00 mg/kg Dose — 108 mg Total Dose

1.10 mLs Volume — SC Rte — Q3D Freq — 6 Days
Start 10-09-2019 — End 10-14-2019
Dose Ovrd

[redacted]-129648-D0 Ins09OCT109:12 Prn09OCT109:12

MMU [redacted] F
8yrs 7mos 5.40kg NRL03

Simbadol (Buprenorp
0.72 mg/kg Dose — 3.9 mg Total Dose

2.20 mLs Volume — SC Rte — Q3D Freq — 6 Days
Start 10-07-2019 — End 10-12-2019
[redacted]
Extended

[redacted] c-129520 Upd09OCT910:43 Prn09OCT910:43

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/6/19	CONT	O			NO LAMENESS, USING HAND WELL.	
					A: LHD5 LAC HEALING BY 1° & 2° INT	
					P: CTM DAILY ON OP, PER DVM NO NEED	
					TO RE-SUTURE. ASSESS TO ↓ CHECKS IF	
					HEALING WELL.	[redacted]
10/7/19					A/P: see 10/6, CTM weight @ sedge	
					change & assess to D/C to DOP	
					if wd stabilizes around 5.4 kg	[redacted]
10/7/19		F	G	N	SO: BAR, OPM: Low BCS/Poor Appt.	
					No chow in cage, ate total of 4 chow	
					per chow log. ≈5mm (L) hand lac	
					palmar aspect moist, licks hand	
					ate supps. Intermittent use of (L) hand.	
					A: L hand lac healing slowly by	
					1° and 2° INT w/favoring use	
					P: Per DVM start Simbadol	
					Extend Keto	
					Sent email lab staff ⊗	[redacted]
10/8/19		F	G	N	SO: BAR, (P), OPM: Low BCS/Poor Appt, (L)	
					hand trauma. Re: (L) side hand trauma.	
					Ate 3 chow, ate supps none in cage.	
					≈1cm laceration to palmar aspect of	
					(L) hand C&D, skin edges apposed. No	
					licking. Improved use today. NEPD.	[redacted]
10/9/19					SO: Observed animal in cage & was	
					able to better visualize D4 lac. there	
					appears to be some purulence &	
					the wound may be not as superficial	[redacted]

MMU [redacted] F
8yrs 6mos 5.40kg NRL03

Simbadol (Buprenorp
0.72 mg/kg — 3.9 mg
Dose — Total Dose

2.20 mLs — SC Q3D — 3
Volume — Rte Freq — Days
Start 10-07-2019 — End 10-09-2019

Ketoprofen 100 mg/mL
5.00 mg/kg — 27 mg
Dose — Total Dose

0.27 mLs — IM SID — 6
Volume — Rte Freq — Days
Start 10-05-2019 — End 10-10-2019

Extended

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 12/9/20

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements: NRL03

Negative TB Test Date: 12/9/20

Physical exam findings: (to be completed by Veterinary staff)

Weight: 11.48 Temp: 97.7 HR: 150 RR: 40 BCS: 3.5 Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	teeth staining - polished
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	L HD2-5, R HD3,4, L FD3,4, tail - amps
Thoracic Auscultation	NAO	A	NE	clear
Abdominal Palpation	NAO	A	NE	gas + liquid filled intestines
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 Dates Reviewed: All Reviewers initials: [redacted]

Comments: R tibia/fibula Fx w/ plate - 2017; chronic LS present - currently on tx; various traumas - resolved

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 12/9/20 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - NR; Chem - NR

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

____ Approved for project
____ Approved for project pending lab review
X Approved for shipment
____ Stable weanling
____ Other

Comments: will need tx for LS

Examining Veterinarian: [redacted] Date: 12/11/20

Original– Animal's record Bottom copy - Requestor PM PC17, Rev. 1/14/14

35416

☐ VIRAL PRECAUTION

BZ59, NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

CLINICAL BIOCHEMISTRY

12, 9, 20
DATE OF SAMPLE

ANIMAL DAT[redacted]
ROOM CAGE

M 7 YR 7 MO 11.8 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

Pre-shipment

HOSPITALIZED NO ☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY NO ☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: _____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	149	mM/L	15		CPK (S,HP)	828	U/L	25		pH		
2		POTASSIUM (S,HP)	3.5	mM/L	16		ALK PHOS (S,HP)	110	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	109	mM/L	17		GGT (S,HP)	42	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	26	mM/L	18		LDH (S,HP)	393	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	18		19		CHOLESTEROL (S,HP)	161	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.5	mg/dl	20		TRIGLYCERIDE (S,HP)	105	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	10.0	mg/dl	21		BILI TOTAL (S,HP)	0.1	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.1	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	69	mg/dl	24		hsCRP	1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.6	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.2	g/dl										
13		ALT (S,HP)	66	U/L										
14		AST (S,HP)	33	U/L										

REPORTED BY [redacted] DATE: 12/9/20

PERFORMED BY: CNPRC X VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5742

☐ VIRAL PRECAUTION

BZ59 / NRLØ3
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

12 / 9 / 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 7 YR 7 MO 11.8 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

pre-shipment

HOSPITALIZED ☐NO ☐YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	4.2	X 10^3/ µl
RBC	5.36	X 10^6/ µl
HEMOGLOBIN	13.7	gm/dl
HEMATOCRIT	41.3	%
MCV	77	fl
MCH	25.6	pg
MCHC	33.2	pg/fl
PLATELETS	2.65	X 10^5/ µl
☐ RETICULOCYTES	%	____ X 10^5/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	7.0	gm/dl

☐ SMEAR EVALUATION: TOTAL WBC 4.2 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	56	2352
LYMPHOCYTES	38	1596
MONOCYTES	4	168
EOSINOPHILS	2	84
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

PLASMA COLOR:
☐ NO ABNORMALITIES
☑ HEMOLYZED 41
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

REPORTED BY: [redacted]

REPORT DATE: 12/9/20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

163

☐ VIRAL PRECAUTION

[redacted]

I.D. / PROJECT CODE

ANIMAL I.D.

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

[redacted]

INVESTIGATOR REQUESTOR

1 / 12 / 20

DATE OF SAMPLE

ANIMAL DAT[redacted]

ROOM CAGE

SEX ____ AGE ____YR ____MO WEIGHT ____KG

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:	PRIOR THERAPY NO ☐ YES ☐ LIST ALL AGENTS:
HOSPITALIZED NO ☐ YES ☐ ____ - ____ ROOM CAGE	TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____HOURS COMMENTS:____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☐ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	143	mM/L	15		CPK (S,HP)	92	U/L	25		pH		
2		POTASSIUM (S,HP)	4.1	mM/L	16		ALK PHOS (S,HP)	199	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	102	mM/L	17		GGT (S,HP)	46	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	30	mM/L	18		LDH (S,HP)	408	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	172	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.7	mg/dl	20		TRIGLYCERIDE (S,HP)	218	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.3	mg/dl	21		BILI TOTAL (S,HP)	0.1	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	13	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.8	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	92	mg/dl	24		hsCRP	2	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.4	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.7	g/dl										
13		ALT (S,HP)	56	U/L										
14		AST (S,HP)	35	U/L										

REPORTED BY [redacted] DATE: 1-10-20

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

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☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

I.D. _____ PROJECT CODE _____

ANIMAL I.D. [redacted]

INVESTIGATOR [redacted] REQUESTOR _____

DATE OF SAMPLE 1 / 10 / 19

ANIMAL I.D. [redacted] ROOM _____ CAGE _____

SEX M YR 2 MO 0 KG 5
AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ✓ COLONY MANAGEMENT _____ EXPERIMENTAL _____

CLINICAL SIGNS / PROBLEMS:

PRIOR THERAPY ☐ NO ☒ YES

HOSPITALIZED ☒ NO ☐ YES _____ ROOM _____ CAGE

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted _____ hrs ☒ Anethetized ☐ other _____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	7.7	X 10 ^3/ µl
RBC	6.03	X 10 ^6/ µl
HEMOGLOBIN	14.9	gm/dl
HEMATOCRIT	45.2	%
MCV	75	fl
MCH	24.7	pg
MCHC	33.0	pg/fl
PLATELETS	3.80	X 10 ^5/ µl

☐ RETICULOCYTES % _____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 7.4 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 7.7 X 10 3 / µl
☐ CORRECTED WBC _____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS	1	77
SEG. NEUTROPHILS	60	4620
LYMPHOCYTES	29	2233
MONOCYTES	7	539
EOSINOPHILS	3	231
BASOPHILS		
OTHER		
NRBC/100 WBC		

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

[redacted] 1-10-20

[redacted] 1-10-20

REPORTED BY: [redacted]

REPORT DATE: 1-10-20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

PC13 (3/14)

MMF

Immunosuppressant Dosing Treatment Sheet

Animal Number: [redacted] Location: Page:

Date	Drug	Dose (mg/kg)	Volume (mls/tabs/caps)	Route (PEG, SQ, PO)	Frequency (SID, BID) *Indicate split dosing (S)	TX start date	TX end date	Initials
1/4/18	MMF	50	19 ml	SQ	BID (S)	1/4/18	1/12/18	
1/13/18	MMF	70	27.2ml	SQ	BID(S)	1/13/18	1/19/18	
1/20/18	MMF	80	30.7ml	SQ	BID (S)	1/20/18	1/26/18	
1/27/18	MMF	90	34.6ml	SQ	BID(S)	1/27/18	2/24/18	
2/25/18	MMF	100	35.9ml	SQ	BID(S)	2/25/18	3/28/18	
2/9/18	Prednisone	1.0	1.1 ml	PO	SID	2/9/18	3/2/18	
2/9/18	Prograf	0.04	0.08	SQ	BID(S)	2/9/18	2/10/18	
2/10/18	Prograf	0.04	0.07	SQ	BID(S)	2/10/18	3/2/18	

Prograf (Tacrolimus) 1mg, capsule
Prograf (Tacrolimus) 5 mg/ml, injectable
Mycophenolic Acid (MMF) 500mg, tablets
Mycophenolate Mofetil (MMF) 25mg/ml, injectable
Prednisone 5mg, tablets
Dexamethasone 10mg/ml, injectable

***Split dosing - The total treatment volume is divided into a AM/PM administration.**

[redacted]

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 9/20/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: NRL #2

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 11.24 Temp: 100.6 HR: 170 RR: 40 BCS: 3.5 Gender: (M) F Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	NAO	(A)	NE	missing multiple digits both hands, L foot
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 09/20/18 Dates Reviewed: All Reviewers initials: [redacted]

Comments: Recurrent episodes of diarrhea, R tibia/fibula fx plated 2017, multiple traumas resolved, thickening of skin on dorsum 2° to SQ MMF - resolved

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 9/20/18 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: WNL

Imaging studies: (to be completed by Veterinary staff)

Date: 9/20/18 Radiographs: U/S exam: Echo

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

X Approved for project Comments:

____ Approved for project pending lab review

____ Approved for shipment

____ Stable weanling

____ Other

Examining Veterinarian: [redacted] Date: 09/21/18

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

4662

B259 / NRL02
I.D. / PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

☐ VIRAL PRECAUTION

MNUU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR / REQUESTOR

HEMATOLOGY

9 / 20 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM / CAGE

M — SEX
5 YR 5 MO — AGE
1152 ~~KG~~ — WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED ☐ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anesthetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	6.4	X 10 ^3/ µl
RBC	5.42	X 10 ^6/ µl
HEMOGLOBIN	13.4	gm/dl
HEMATOCRIT	40.8	%
MCV	75	fl
MCH	24.7	pg
MCHC	32.8	pg/fl
PLATELETS	3.73	X 10 ^5/ µl
☐ RETICULOCYTES	%	____ X 10 ^6/ µl
☐ PCV (CENTRIFUGED)		%
☐ PLASMA PROTEIN	6.5	gm/dl

☐ SMEAR EVALUATION: TOTAL WBC 6.4 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	59	3776
LYMPHOCYTES	40	2560
MONOCYTES		
EOSINOPHILS	1	64
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/20/18 [redacted]

9/20/18 [redacted]

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

REPORTED BY: [redacted]

REPORT DATE: 9/20/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

23-01594_000580

UCD 0543

1988

☐ VIRAL PRECAUTION

B7591, NRLD2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

9, 20, 18
DATE OF SAMPLE

M 5 YR 5 MO 11.52 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

Pre-project

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES X HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX ____ SLOT ____

SERUM/PLASMA

#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	146	mM/L	15		CPK (S,HP)	340	U/L
2		POTASSIUM (S,HP)	3.8	mM/L	16		ALK PHOS (S,HP)	168	U/L
3		CHLORIDE (S,HP)	106	mM/L	17		GGT (S,HP)	36	U/L
4		TCO_2 (S,HP)	29	mM/L	18		LDH (S,HP)	181	U/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	143	mg/dl
6		PHOSPHOROUS (S)	4.5	mg/dl	20		TRIGLYCERIDE (S,HP)	39	mg/dl
7		CALCIUM (S,HP)	9.4	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl
8		BUN (S,HP)	14	mg/dl	22		DIRECT	0.1	mg/dl
9		CREATININE (S,HP)	1.1	mg/dl	23		INDIRECT		mg/dl
10		GLUCOSE (S,P,HP)	73	mg/dl	24		hsCRP	1	mg/l
11		TOTAL PROTEIN (S)	6.1	g/dl					
12		ALBUMIN (S)	3.9	g/dl					
13		ALT (S,HP)	17	U/L					
14		AST (S,HP)	20	U/L					

URINE

#	✓	TEST	RESULTS	UNITS
25		pH		
26		SODIUM		mmol/L
27		POTASSIUM		mmol/L
28		CHLORIDE		mmol/L
29		PHOSPHOROUS		mg/dl
30		CALCIUM		mg/dl
31		MAGNESIUM		mg/dl
32		CREATININE		mg/dl
33		MICRO PROTEIN		mg/dl
34		P/C RATIO		mg/dl
35		OSMOLALITY		mOsm/kg

REPORTED BY [redacted] DATE: 9/20/18

PERFORMED BY: CNPRC X VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11/24/20		G	G	N/S	SO: BAR. OPM: lig stool. (P) mostly normal stool is present. A small area of soft stool is present. A: stable P: Continue long term PBS (4/2/21), Continue long term Inulin & Tylosin cim 1x/week	[redacted]
12/1/20		G	G soft	N	SO: BAR OPM (P) stool stool is soft though WNL A: N stool most of the time on tx P: Cont Tylosin (12/27), PBS (4/2) & Inulin (4/2) Meant on OP 1/wk	[redacted]
12/8/20		G	G	N	SO: BAR OPM (P) stool A/P see 12/1	[redacted]
① ~~12/8/20~~					_pre-project physical x pre-shipment physical _weaning physical See associated P.E. sheet for additional information.	[redacted]
12.9.20	1148				MMU [redacted] NRL03 W.O 3857 1.2 MLS KET IM / D→ 1310 / BLED 3 MLS TB TEST RIGHT EYE 24HR___ 48HR___ 72HR___ CAGE TIME: 2.30 15 MIN 2 30 MIN 3 45 MIN___ 60MIN___ 75MIN___ 1.5HR___ 90MIN___ 2HR___	[redacted]
12/15/20		G	G	N	SO: BAR OPM (P) stool A/P see 12/1	[redacted]
12/16/20					Animal shipped to Neuralink	[redacted]

① Correct date is 12/9/20 [redacted] 12/9/20

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 113

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/14/20	Cons.				A: Stable mmcow / chronic diarrhea, first recur	
					episode of soft stool.	
[redacted] 10/15/20					P: CTM on op 1x/week. Continue long term treatment	
⊗ Recharge					of diarrhea (PBS, Fiber Inulin, Tylosin) 11/27	[redacted]
10/16/20	11.03				Box Weight	[redacted]
① 10.20.20					① ~~BLED~~ 3 mls via Arm pu	
10/20/20		G	G	N	SO: PBAR OPM (P) stool A/P see 10/14	[redacted]
10/27/20		G	G	N	SO: PBAR OPM (P) stool A/P see 10/14	
10/29/20		G	G	SS	SO: PBAR (P), OPM: L stool. Re: L stool.	
					Semi solid stool in cages. No signs	
					Dell 20. Ate PBS.	
					A: Confirmed variable stool on Tylosin,	
					PPS, wt ↑	
					P: Continue PBS and Tx	
					CTM on MH	[redacted]
10/30/20	11.54				Box Weight	[redacted]
11/3/20		G	G	N	SO: PBAR OPM (P) stool A/P see 10/14	
11/10/20		G	G	N	SO: PBAR OPM (P) stool A/P see 10/14	[redacted]
11/13/20	11.77				Box weight	
11/16/20		G	G	N	SO: PBAR OPM (P) stool A/P see 10/14	[redacted]

MMU [redacted] M
7yrs 7mos 10.50kg NRL03

Tylosin .67 mg/mg
20.00 mg/kg Dose — 210 mg Total Dose

314 mgs Volume — PO Rte — SID Freq — 228 Days
Start 05-14-2020 End 12-27-2020

Extended

11/13/20 ②		F	G	N	SO: PBAR. Re: poor appe & cookies - unable to	
					conf. Adequate intake of stool P: CTM	[redacted]

① E.E. Technician wrote in wrong record, nothing done to animal [redacted] 10.20.20 ② RE [redacted] 11/17/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 114

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/21/20		G	G	N	SO: BAR (P) OPM (P) stool Animal is almost completely transitioned to new OW HFD (Purina 5000) A: N stool on tx P: Cont PBS, med in of trifaxan B/ consider trying to wean off tx w/ new chow in ~ 1 wk or more	[redacted]
9/23/20					A: N stool quality on tx	
					P: per 9/21, extend tx. CTM 1x/wk on OPM.	
9/24/20		G	G	N	SO: BAR (P) RE: liq stool, ate fiber + PBS, confirmed source: NEPD A/P: see 9/21.	[redacted]
9/27/20		G	G	N SS	SO: BAR (P) Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Confirmed / Unconfirmed and recent report, on ✓ P: CTM on OP 1x/wk. ate PBS, NEPD.	[redacted]
9/30/20		G	G	N	~~SO: BAR, OP: R-eye inflamation; no significant peri ocular erythema, mild thickening of R lid, possible small bruise on R lid, no decrease in palpebral fissure, no ocular d/c~~	[redacted]
10/1/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 9/21 SO2: Several animal changes in room today so wait a week @ least for the room to settle down again	[redacted]
10/6/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 10/1	[redacted]
10/14/20		G	G	S	SO: BAR (P) OPM L stool. Re Liq stool. Stool in cage has same form and color consistent with soft stool.	[redacted]

(1) RE wrong record 10/5/20 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] lifornia National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
8/17/20		G	G	N	SO: BAR, (P) OPM (D) stool A: Improved stool equal on tx P: CTM 1/wk cont tx (inulin & PBS 10/4, tryfloxin 11/27, & NW ↑fiber chow)	[redacted]

MMU [redacted] M
7yrs 4mos 10.26kg NRL03

Fiber Inulin
2.00 chw/animal Dose — 2. Chew Total Dose

2.00 Chew Volume — PO Rte — SID Freq — 276 Days

Start 01-03-2020 End 10-04-2020

8.21.20	10.01				[redacted] [redacted] 8/21/2020 ___mls Ket. BCS= 3 Tartar: 0 1 2 3 4 Teeth Scaled Y N TB Test: R L Eye 10.01 24hr___ 48hr___ 72hr___ st. alopecia lower legs ANIMAL MONITORED UNTIL RECOVERED	
8/22/20		G	G	CC	SO: BAR, RE: Vomit. Animal sedated yesterday for routine PE A: suspect emesis secondary to sedation P: CTM on MH /DP	[redacted]
8/24/20		G	G	N	SO: BAR, DP: Liq. stool, normal stool in cage A/P: see 8/17	[redacted]
8/25/20		G	G	CC	SO: BAR RE: liq stl ; unable to confirm due to recent cage hosing, NEPD, ate PBS & inulin	[redacted]
8/31/20		G	G	N	SO: BAR (P) OPM (D) stool A/P see 8/17	[redacted]
9/8/20		G	G	N	SO: BAR (P) OPM (D) stool A/P see 8/17 P: Transitioning from NW high fiber chow to old world high fiber chow (slowly) in the next few wks	[redacted]
9/14/20		G	G	N	SO: BAR (P) OPM (D) stool Animal is currently transitioning to OW High fiber chow (Purina 5000) A/P see 8/17	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 112

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/10/20		G	G	N	SO: BAR, DP: liq stool / wt loss; only normal stool in	
					cage post-hosing.	
					A: chronic liq. stool on LT tx w/overall improvement	
					P: CTM on OP 1x/wk, cont. LT tx	[redacted]
6/16/20		G	G	N	SO: BAR OPM (P) stool/wt loss A: Improved	
					stool qual on tx (trifaxin 11/27, PBS 10/4,	
					inulin 2/20 & new world chow-high fiber) ↑ wt	
					P: CTM on OP ✓ 1/wk cont tx,	[redacted]
6/23/20		G	G	N	SO BAR (P) OPM (P) stool/wt loss A/P see 6/16	[redacted]
6/24/20		G	G	N	SO: BAR (P) RE: Poor app; active + interactive,	
					ate all chow from AM feed, stretching well	
					took treats, NEPD	
					A: 1st recent report for poor app	
					P: CTM on MTT	[redacted]
6/26/20	9.63				Box weight	
6/29/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 6/16	[redacted]
7/1/20		G	G	N	SO: BAR, RE: LS; ate PPS, unable to confirm report.	
					A/P: SLL 6/10	[redacted]
7/6/20		G	G	N/S	SO: BAR (P) OPM (P) stool A/P see 6/16	
7/13/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 6/16	[redacted]
7/20/20		G	G	N	SO BAR OPM look stool. only normal stool present	
					A/P see 6/16	[redacted]
7/24/20	10.26				Box Weight	
7/28/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 6/16	[redacted]
					[redacted] ☒ Recharge [redacted]	[redacted]
8/3/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 6/16	
8/10/20		G	G	N	SO: BAR (P) OPM (P) stool A/P see 6/16	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 111

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
MMU [redacted] M 7yrs 1mo 10.50kg NRL03					Tylosin 100 mg/tablet 20.00 mg/kg Dose 210 mg Total Dose	
2.10 tabs Volume	PO Rte	SID Freq	133 Days		Start 01-03-2020 End 05-14-2020	
MMU [redacted] M 7yrs 1mo 10.50kg NRL03					Tylosin .67 mg/mg 20.00 mg/kg Dose 210 mg Total Dose	
314 mgs Volume	PO Rte	SID Freq	198 Days		Start 05-14-2020 End 11-27-2020	[redacted]
5/6/20		G	G	N	SO: BAR OPM (P) stool w/ recent wt loss A: ↑NW chow 25% animal is eating all of it. Stool is norm P: ✓ AMPS 1/wk cont all tx (tylosin 11/27, PBS 10/4, inulin 8/29) - along w/ NW ↑ fiber chow	[redacted]
5/20/20		G	G	N	SO: BAR OPM (P) stool w/ recent wt loss A/P see 5/6	[redacted]
5/29/20	9.70				Box Weight	[redacted]
6/2/20		G	G	N	SO: BAR OPM (P) stool w/ recent wt loss A/P see 5/6	[redacted]
6/3/20		G	G	CC	SO: BAR (P) RE: Liq. stool OP: Liq. stool; Ate PBS, Husbandry reported stool was liquid but not watery Interactive in cage, will strech for treats, no bloating observed, NEPD. A: 1st recent report for LS while on tx P: CTM on OP 1x/wk, cont. all Tx, if LS reports continue, consider unpairing to confirm source of LS.	[redacted]
6/7/20		G	G	N/L	SO: BAR (P) RE: liq. stool, equal amt of LS + normal stool, active in cage, consumed PBS + treats. NEPD. A: wt ↑, LS on tx (Tylosin, Fiber inulin, PBS) P: If LS cont. consider ORT or psyllium wafer. CTM 1x/wk	[redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5/1/20	9.33				Box Weight	[redacted]
5/4/20		G	G	N	SO: BAR OPM ① stool A: ① variable stool	
					mostly norm on tx ② Noted 0.5 kg	
					wt loss P: ✓ DMS 1/wk, cont tx	
					(hyoscin 11/4, mucin 8/29, PBS 10/4) & ↑ fiber chow.	
					Offer supps @ feeding time to encourage	
					intake or ↑ chow.	[redacted]
5/6/20					SO: Discussed w/ animal husbandry	
					supervisor. Animal was receiving	
					516 gm pellets of chow/feeding. Requested	
					that animal now receive 250 mod/	
					70 gm pellets/feeding. And since	
					animal doesn't always eat all his	
					chow (may not like it as well) Husbandry	
					staff will try soaking it in kooland	
					or boost. A: ① 0.5 kg wt loss on	
					NW high fiber chow P: ↑ rations, soak chow	
					to encourage intake. If animal won't	
					eat more chow consider supps	
					want wt @ least 1/mo ✓ DMS 1/wk	[redacted]
5/13/20		G	G	N	SO: BAR OPM ① stool - w/ recent wt loss	
					↑ NW high fiber chow by 250 animal	
					started eating all of it after adding of	
					soaking chow w/ Kooland A: stool	
					norm on tx ↑ food & good appetite	
					to address 0.5 kg wt loss P: cont tx	
					(hyoscin, mucin, PBS) & ↑ chow. Await rev	
					wt to assess appropriate amt of chow	
					1/wk on OP	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
3/29/20		F	G	CC	SO: BAR. OP: liq stool, Re: poor appetite supps + PBS	
					Readily ate treats. NEPD.	[redacted]
					A: variable app recently, wt stable from 3/16 to 3/24	
					P: CTM on OP 1x/wk, consider soaking chow if PA persists	[redacted]
3/30/20		G	G	N	SO: BAR OPM ⓐ stool A: variable stool	
					- mostly normal. WT stable 3/16 - 3/24	
					P: ✓ AHS 1x/wk, consider soaking chow if	
					pa persists	[redacted]
4/6/20		G	G	N	SO: BAR OPM ⓐ stool A/P see 3/30	
					Cont tx (PBS 5/1, inulin 5/1, Tylosin 5/1)	[redacted]
4/13/20		G	G	N	SO BAR OPM ⓐ stool A: variable stool	
					- mostly N, WT stable P: ✓ AHS 1x/wk, cont	
					tx (PBS 5/1, inulin 5/1, tylosin 5/1) soak	
					chow if poor app	[redacted]
4/17/20		F	G	CC	SO: BAR. OP/Re: liq stool, active w/ NEPD. Husbandry	
					technician unsure if this MMU was source of small pile	
					of liq stool.	
					A: unconfirmed GS report	
					P: see 4/13	[redacted]
4/20/20		G	G	N	SO: BAR OPM liq stool. Variable stool, mostly normal A/P: see 4/13	[redacted]
4/27/20		G	G	N	SO: BAR OPM ⓐ stool A/P see 4/13	
					Extend supps Rx	[redacted]
						[redacted]

MMU [redacted] M
7yrs 0mos 10.50kg NRL03

Tylosin 100 mg/tablet
20.00 mg/kg Dose — 210 mg Total Dose

2.10 tabs Volume — PO Rte — SID Freq — 330 Days
Start 01-03-2020 End 11-27-2020

1.00 sndwch Volume — PO Rte — BID Freq — 360 Days
Start 10-11-2019 End 10-04-2020

MMU [redacted] M
7yrs 0mos 10.50kg NRL03

Fiber Inulin
2.00 chw/animal Dose — 2. Chew Total Dose

2.00 Chew Volume — PO Rte — SID Freq — 240 Days
Start 01-03-2020 End 08-29-2020

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 108

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/17/20					MMU [redacted] M 6yrs 11mos 10.50kg NRL03 — Tylosin 100 mg/tablet, 20.00 mg/kg Dose, 210 mg Total Dose, 2.10 tabs Volume, PO SID 120 Rte Freq Days, Start 01-03-2020 End 05-01-2020	MMU [redacted] M 6yrs 11mos 10.50kg NRL03 — Fiber Inulin, 2.00 chw/animal Dose, 2. Chew Total Dose, 2.00 Chew Volume, PO SID 120 Rte Freq Days, Start 01-03-2020 End 05-01-2020	MMU [redacted] M 6yrs 11mos 9.11kg NRL03 — Probiotic Sandwich, 1.00 sndwch/animal Dose, 1. sndwch Total Dose, 1.00 sndwch Volume, PO BID 210 Rte Freq Days, Start 10-11-2019 End 05-07-2020	[redacted]
3/23/20		G	G	N	SO: BAR OPM: LS NO recent reports of LS. Eagerly ate treats. A: Stool quality improved w/ tx P: CTM weights 2x/mo, CTM on OPM 1x/w, T f wt [redacted] D/C to LPOP next wk. Recharge	[redacted]
3/24/20	9.8					[redacted]
3/26/20		P/F	G	N/SS	SO: BAR, ~~OP/RO~~ ①: OP: liq stool, Re: poor app. ate 1/7 chow according to feed log. Ate all offered treats - grapes + fig bars - eagerly. A: confirmed poor app for chow, wt stable P: CTM on OP 1x/wk, assess to D/C next wk	[redacted]
3/27/20		F/P	G	N	SO: BAR, (P), Re: Poor App (lo chow) Ate 1 chow ro am. Ate treats, ate PBS. A: 2nd recent episode of poor app Confirmed P: CTM on OPM/MA Continue tx Consider supps if reports continue	[redacted]
3/28/20		G	G	N/SS	SO: BAR (P) RE: LIQ. STOOL; NEPD. VARIABLE STOOL IN CAGE ATE PBS A: 1ST RECENT REPORT FOR LS P: CTM ON OP 1X/WK, SEE 3/23	[redacted]

① RE [redacted] 3/26/20

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

MMU [redacted] M
6yrs 10mos 10.50kg NRL03

Tylosin 100 mg/tablet
20.00 mg/kg Dose — 210 mg Total Dose

2.10 tabs Volume — PO Rte — SID Freq — 90 Days
Start 01-03-2020 End 04-01-2020

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/25/20		G	G	N/L	SO: BAR (P) OPM. (A) Spoke lab staff re: animal has mostly N stool w/ occ loose stool now A: No re of (D) stool since 1/10 Sl. ↓ wt but good wt for animal P: ✓ AHS 1/-2x's/wk cont. hxs	[redacted]
2-28-20		G	G	N	SO BAR (P) OP: liquid stool: Normal stool in cages, no liquid stool seen. Animal is active with N&PD, Eating well.	[redacted]
3/3/20		G	G	N	SO BAR (P) OPM (W) stool A: N stool Sl. ↓ wt (but good wt) P: ✓ AHS 1/wk (Ot inulin (4/1) & tylosin (4/1)	[redacted]
3/6/20		G	G	N/SS	SO: BAR (P) OPM: LS. ate PBS, active, N&PD A/P - see 3/3	[redacted]
3/6/20	9.8				Box Weight	[redacted]
3/8/20		?	G	L	SO: BAR (P) RE: poor appetite. - No bra seen in cage but cages had just been cleaned A/P see 3/3	[redacted]
3/10/20		G	G	N/SS	SO: BAR (P) OP: liquid stool, normal + semi-solid stool in cage. suspect semi-solid stool belongs to this animal A/P see 3/3	[redacted]
3/17/20		G	G	N	SO BAR (P) OPM (P) stool A: N stool most of the time on high fiber chow, tylosin fiber inulin & PBS (2) recent wt loss 7% since starting new diet BCS ~2.5/3.0 P: Contact Dx, ✓ AHS 1/wk Consider alt high fiber diet w/ low starch when available	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/20/20					high fiber diet - NO MH reports of ⊕ stool	
					since Jan 4 Mebo still on inuth (4/1)	
					PBS (4/1) & tylosin (3/1) P. cont all tx	
					visits / wk If stool qual declines	
					vet assess	[redacted]
2-21-20	10.36				[redacted] [redacted] 2/21/2020	
					1.3 mls Ket. BCS= 3.5 Tartar: 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: R L Eye 24hr___ 48hr___ 72hr___	
					wt. 10.36 Bled 3ml SB / Bled 20chem / and 1ml CBC	[redacted]
					ANIMAL MONITORED UNTIL RECOVERED	
2/21/20		Fast	G	N/SS	SO: BAR, ⊕, DPM: Liquid stool. Some	
					semi solid stool noted in exercise pen	
					mostly normal stool throughout cages.	[redacted]

PHYSICAL EXAM [redacted]

Date 2-21-20 Weight 10.360 BCS 3.5

HR 144 RR 36 TEMP 99.1

☐ Project Code

☒ Shave Tattoo

1. Integument WNL
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation liquid digesta w/ gas
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NO

Animal may be unpaired or individually housed while receiving veterinary care.

Ai Chronic intermittent Diarrhea w/ fragmento SS stool, on extended course of tylosin

Pi ✓ AAS 1x/wk, su 2/20 [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) Ⓟ	Hydration (G, F, P) Ⓟ	Stool (N, SS, L, B) Ⓟ	Observations	Initials
1-31-20		G	G	SS/N	SO: BAR OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: P: CTM 1 x/wk on OPM or as reported.	[redacted]
2/5/20		G	G	SS/N	"ish" SO: BAR OPM: (P) stool A: Improved stool quality on tylosin (2/16), PBS (2/7) inulin (2/1) & high fiber diet. Animal is eating high fiber entirely but doesn't like it so it may be soaked or mixed w/ other items P: VMHS 1-2x's/wk Cont w/ all treatments to see if stool qual improves Reassess next week	[redacted]
2/7/20	10.5					[redacted]
2-7-20		G	G	N	SO BAR, OP: liquid stool; Normal stool in cage BAR. Animal on high fiber diet. EATS PBS, Active with NEPD. A: stool quality improving P: ctm on opm / mh.	[redacted]
2/11/20		G	G	SS	SO: BAR OPM (P) stool A: Stool has been mostly SS/N but occasionally looser though New animal (female) in room some displays & disruptions in room P: CTM OPM VMHS 1/wk	[redacted]
2/12/20		G	G	SS	SO: BAR OPM (P) stool A/P see 2/11	[redacted]
2/14/20		Fast	G	N/SS	SO: BAR, OPM: Liquid stool (P), Ate PBS normal and small amt of semi solid Stool in cages.	[redacted]
2/20/20		G	G	SS	SO: BAR OPM (P) stool A: Stable on	[redacted]

MMU [redacted] M
6yrs 9mos 10.50kg NRL03

Tylosin 100 mg/tablet
20.00 mg/kg Dose — 210 mg Total Dose

2.10 tabs Volume — PO Rte — SID Freq — 59 Days
Start 01-03-2020 — End 03-01-2020
[redacted]
Extended

KLC C-134403 Upd06FEB13:07 Prn06FEB13:08

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/17/20		G	G	SS	SO: BAR, OPM: Liquid stool. No fecal staining. Ate PBS + drank ORT	[redacted]
1/21/20		G	G	N	SO: BAR, OPM: Liquid stool. Ate PBS. Drank ORT.	[redacted]
1/22/20		G	G	N	SO: BAR, (P) OPM: Liquid stool. Ate PBS drank ½ ORT. No fecal staining. Only normal stool	[redacted]
1/23/20		G	G	N/SS	SO: BAR (P) OPM: (P) stool A: Improved stool qual Animal doing well P: Stay on high fiber/low starch diet as add Rx to improve stool qual along w/ inulin, PBS, trfoson + ORT Animal reaching goals diet Diet started pm 1/22 or am 1/23 Monit response to diet ✓ AHS 2x's/wk	[redacted]
1-24-20	10.7					[redacted]
1-28-20		G	G	SS	SO BAR, OP: liquid stool; cage cleaned prior to observation, small amt of semi solid stool fresh in pan. Animal eating well and is active with NSPD. On tx for L. Stool. Ate PBS, fiber inulin.	[redacted]
1/30/20		G	G	N	SO BAR OPM: (P) stool A: N stool on new diet (since 1/17) along w/ PBS (4/7), inulin (4/7) + tylosin (2/16) P: If N stool cont slowly wean off tx's 1 @ a time ✓ AHS/WK	[redacted]

MMU [redacted] M
6yrs 9mos 10.50kg NRL03

Tylosin 100 mg/tablet
20.00 mg/kg Dose — 210 mg Total Dose

2.10 tabs Volume — PO Rte — SID Freq — 45 Days

Start 01-03-2020 End 02-16-2020

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/11/20		G	G	N	SO: BAR OP: LIQ. STOOL; ATE PBS & DRANK ORT. EASENING ATE AN OFFERED TREATS. NORMAL STOOL IN CAGE POST HOSING (UNPAINED). ANIMAL IS BRIGHT & ALERT, MOVING WELL W/ NEPD. A/P: SEE 1/10 ENTRY	[redacted]
1/12/20		G	G	N	SO: BAR (P) RE: liq. stool; no LS visualized w/ good amt of normal stool post cage clean. NEPD. Readily ate treats. A: Unconf. LS. on Tylosin. Rx P: See 1/10 entry.	[redacted]
1-13-20		G	G	SS	SO BAR OP: liquid stool: cage cleaned prior to ~~appe~~ ① observation ②. Talked to tech. Stool was semi solid in cage. Animal is active with NEPD.	[redacted]
1-14-20		G	G	CC	SO BAR. OP: liquid stool: cage cleaned prior to observation. Talked to tech, stool was semi solid → Normal. Animal active with NEPD. Eats lots of veggie training treats.	[redacted]
1-15-20		G	G	CC	SO BAR OP: liquid stool; cage cleaned prior to observation. NO MH report for liquid stool. Animal active with NEPD.	[redacted]
1/15/20		G	G	SS	SO, BAR CBC (1/10) Hct 45, Chem 20 (1/10) Chol 172, ~~Eho~~ ③ TG 218 A: ① Mild metabolic syndrome. ② Persistent loose stool P: Cort trifoam (2/1) Imodium (4/1), K+ Phos (1/19) PBS (4/1), ORT (2/2) ✓ MWF	[redacted]
1/16/20		G	G	SS	SO: BAR OPM O stool A/P: See 1/15	[redacted]

① EE [redacted] 1-13-20 ② W.O. "observation" [redacted] 1-13-20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊖	Hydration (G, F, P) ⊖	Stool (N, SS, L, B) ⊖	Observations	Initials
1/10/20					A: Persist/variable diarrhea on infusion, PBS, insulin + ORT P: AHS daily. Provide supp care PRN. Plan to start high fiber chow when it comes in. If persist (poor/no efficacy w/ infusion) consider metronid, doxycycline or azithromycin Rx Meanwhile, cont. infusion (2/1), insulin (4/1) PBS, (4/1), ORT (2/2) K-Pos (1/19	[redacted]

STP pHox Ultra

Printed: 01/10/2020 09:35:39 AM
Analyzed: 01/10/2020 09:33:29 AM
Analyzer ID: Z11818060N

Barometer	773.3 mmHg
Sample Type	Venous
Operator:	123456
Releaser:	auto
Patient ID:	[redacted]
Patient Name:	

Other Flags

Comments

Test	Value	Units	Flags
pH	7.420		
pCO2	44.9	mmHg	
pO2	53.8	mmHg	
SO2%	86.9		
Hct	46	%	
Hb	15.2	g/dL	
Na+	143.6	mmol/L	
K+	3.64	mmol/L	
Cl-	105.7	mmol/L	
Ca++	1.17	mmol/L	
Mg++	1.11	mmol/L	
Glu	109	mg/dL	
Lac	2.0	mmol/L	
BUN	12	mg/dL	
Creat	0.5	mg/dL	
TCO2	30.8	mmol/L	
nCa	1.18	mmol/L	
nMg	1.13	mmol/L	
Gap	8.5	mmol/L	
Ca++/Mg++	1.1	mol/mol	
BUN/Creat	23.9	mg/mg	
BE-ecf	4.8	mmol/L	
BE-b	4.7	mmol/L	
SBC	28.4	mmol/L	
HCO3-	29.4	mmol/L	
P50	26.9	mmHg	
O2Cap	21.2	mL/dL	
O2Ct	18.6	mL/dL	

Cage Time 9:30 (AM) PM
15 min 3 30 min___ 45 min___ 1 hr___
1.25 hr___ 1.5 hr___ 1.75 hr___ 2 hr___

1 recumbent, 2 movement, 3 sitting up

MMU [redacted] M
6yrs 8mos 10.50kg NRL03

Potassium Acid Phosphate
0.25 tab/animal Dose — .25 mg Total Dose

0.00 tabs Volume — PO Rte — SID Freq — 10 Days
Start 01-10-2020 — End 01-19-2020

KLC 0-134969 Ins10JAN09:59 Prn10JAN09:59

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
1/4/20		G	C	N/SS	SO: BAR (P) RE/OP: LIQ. STOOL; VARIABLE STOOL IN CAGES. ANIMAL APPEARS WELL HYDRATED & IS MOVING WELL W/ NEPD. ATE PBS & DRANK ORT. A/P: SEE 1/3	[redacted]
1/5/20		G	G	N SS	SO: BAR (P) OPM: liq. stool, & liq. stool seen. Ate inulin, PBS, & ORT. MMU active, NEPD, & tail stain.	[redacted]
1-6-20		G	G	SS	SO BAR (P) op: liquid stool: Semi solid stool in cage. Animal active with NEPD. Ate inulin PBS and ① drank ort.	[redacted]
1-7-20		G	G	N	SO BAR (P) op: liquid stool; Normal stool in cage, Animal active with NEPD. Ate PBS, inulin and drank ort.	[redacted]
1-8-20		G	G	SS	SO BAR (P) op: liquid stool; Semi solid stool in cages. Active with NEPD, Ate PBS, inulin and drank ort.	[redacted]
1/9/20		G	G	N/SS	SO: BAR (P) OPM (L) stool A: Improved stool qual on tx P: Cont ORT (2/2), IV PBS (4/1), inulin (4/1), Tylosin (2/1) ✓ MAS daily	[redacted]
1/10/20	10.5	F	F	N/L	SO: Q/BAR (P) OPM (W) stool Sedated w/ 0.5 mls Ket & 0.1 mls dexmed/atp NOVA Hct 46, Na+ 144, K+ 3.64, Cl- 106 Ht CO_2 - 29 osmo 287 Drawn ~1,000 mls LRS SQ. Obtained 2.5 mls blood for NOVA, CRE & Chem 20	[redacted]

MMU [redacted] M
6yrs 8mos 10.50kg NRL03

ORT
2.00 bottle(.5L)/anim Dose — 2. Bottle(.5L) Total Dose

2.00 Bottle(.5L) Volume — PO Rte — SID Freq — 33 Days
Start 01-01-2020 End 02-02-2020
[redacted]

① EG [redacted] 1-6-20.

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ②	Observations	Initials
1/3/20		F	F/G	L	30 @ BAR Re: ① stool - cont. Animal still hair mild/mod sunken eye appearance quiet but active. Ate with fair appetite. P: Persistent ① stool w/ hydration improve. P: Obtain ampull CBC Nova to assess for fluids & PX	

Sample Profile
STP pHox Ultra

Printed: 01/03/2020 09:06:18 AM
Analyzed: 01/03/2020 09:03:59 AM
Analyzer ID: Z11818060N

Barometer 771.3 mmHg
Sample Type Venous
Operator: 123456
Releaser: auto
Patient ID: [redacted]
Patient Name:

Other Flags

Comments

Test	Value	Units	Flags
pH	7.280		
pCO2	56.7	mmHg	
pO2	46.6	mmHg	
SO2%	74.2		
Hct	46	%	
Hb	15.1	g/dL	
Na+	146.1	mmol/L	
K+	4.09	mmol/L	
Cl-	107.7	mmol/L	
Ca++	1.21	mmol/L	
Mg++		mmol/L	UC
Glu	77	mg/dL	
Lac	7.7	mmol/L	
BUN	13	mg/dL	
Creat	0.8	mg/dL	
TCO2	28.6	mmol/L	
nCa	1.13	mmol/L	
Gap	11.5	mmol/L	
BUN/Creat	15.5	mg/mg	
BE-ecf	-0.1	mmol/L	
BE-b	-0.5	mmol/L	
SBC	23.4	mmol/L	
HCO3-	26.9	mmol/L	
P50	27.5	mmHg	
O2Cap	21.1	mL/dL	
O2C			
A			
Osm			

MMU [redacted] M
6yrs 8mos 10.50kg NRL03

ORT
2.00 bottle(.5L)/anim. Dose — 2. Bottle(.5L) Total Dose

2.00 Bottle(.5L) Volume — PO Rte — SID Freq — 12 Days
Start 01-01-2020 End 01-12-2020

Extended
6yrs 8mos 10.50kg NRL03

Tylosin 100 mg/tablet
20.00 mg/kg Dose — 210 mg Total Dose

2.10 tabs Volume — PO Rte — SID Freq — 30 Days
Start 01-03-2020 End 02-01-2020

MMU [redacted] M
6yrs 8mos 10.50kg NRL03

Fiber Inulin
2.00 chw/animal — 2. Chew Total Dose

Chew — PO Rte — SID Freq — 90 Days
1-03-2020 End 04-01-2020

Administered 500 mls LRS SQ cageside
Improved appearance 2 hrs. post
A: Persistent ① stool w/ improved hydration post ORT & fluids
P: Cont 2 ORT/d (3 if animal wants more late in day) Cont PBS (4/7) Start Inulin (4/1) & Tylosin (2/1) ✓ AHS daily until stool is significantly improved (SS)

① Re [redacted] 1/3/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 99

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12-9-19					Moved to [redacted] per move #19-878.	[redacted]
12/13/19	10.5				Box weight	
12-27-19	10.5					
12/31/19		G	G	LL	SO: BAR(P) Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: WS on ↑TOP P: CTM on MH + LTOP — Att PBS, NEPP.	cb
1-1-20		G	G	L/N	SO Bar, Re: liquid stool: liquid stool in cage paw plus tail staining. Recently took treats. Ate PBS. A: Confirmed liquid stool report. P: Admit to opm start PBS① ORT, Animal already on long term PBS.	
					Admit ✓ Prob. Sheet ✓	
1/2/20		F/G	F	L	SO: QAR Re: LIQ. STOOL; LARGE AMT OF LIQ., WATERY STOOL IN CAGE. ANIMAL HAS A SLIGHTLY SUNKEN APPEARANCE OF THE EYES. LAB STAFF REPORTS 5 CHOW LEFT THIS MORNING & THAT IT IS UNCOMMON FOR ANIMAL TO LEAVE CHOW	[redacted]
1/2/20		F/G	F/G	L	SO: BAR Cont ② stool Animal recently drinks ORT & has hydration guidelines improved A: ① stool - Occasional diarrhea on LT PBS (since Nov 2018) Mild hydration compromise today given ORT & supps P: ✓ AHS 1/3 & determine Plan for weekend Cancel order, pull NaVA +/- fluids if any concerns	[redacted]

MMU [redacted] M
6yrs 8mos 10.50kg NRL03

ORT
2.00 bottle(.5L)/anim Dose — 2. Bottle(.5L) Total Dose

2.00 Bottle(.5L) Volume — PO Rte — SID Freq — 7 Days
Start 01-01-2020 End 01-07-2020
Dose Ovrd | HANG 2 BOTTLES PLEASE

[redacted]S-134329-DO Ins01JAN#10:38 Prn01JAN#10:38

① EE. [redacted] 1-1-20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

California National Primate Research Center

Animal ID# [redacted]

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/18/19	9.3				Box Weight	[redacted]
11/1/19	9.6					[redacted]
11/9/19		G	G	N	SO: BAR RE: RED LIPS & TRAUMA SEEN. NEPD A: STABLE ANIMAL P: CTM ON MH	[redacted]
11/13/19					moved to [redacted]-3 per move # 19-810	
11/26/19		G	G	N	SO: BAR AAR: bloody nasal d/c day #3; & epistaxis seen @ observation, 2nd occurence per project staff. A: 2nd recent epistaxis report P: CTM on MH.	[redacted]
11/27/19 1033						
11/27/19		G	G	N	SO: BAR RE: AAR: Bloody nasal d/c. Animal has d/c (bloody) at (B) nare. No sneezing or coughing. NEPD A: Continued Bloody nasal d/c 1st recent report P: No Tx needed at this time CTM on MH	[redacted]
11/30/19			G	G	N	SO: BAR (P) RE: BLOODY NASAL D/C; & BLOOD VISIBLE ON ANIMAL OR IN CAGE POST HOSING. NEPD, & SNEEZING OR COUGHING. A: 4TH REPORT FOR EPISTAXIS. P: CTM ON MH. CONSIDER TX IF REPORTS PERSIST	[redacted]
12/1/19					SO: BAR RE: Bloody nasal discharge Blood: Yes/No, sm amt. dried @ nares Nasal discharge: clear, cloudy, none. Erythema: mild, moderate, none. A: 5th recent report P: CTM on MH/ OPM All PBS, NEPD, & blood seen in cage.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

California National Primate Research Center

Animal ID# [redacted]

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/29/19	cont				Moving well and eating treats NEPD A: Mild trauma healing by 2nd int P CTM on OPM, 1x/w. Cephalexin ends 10/1 and PBS and consider D/C @ end of wk if wounds resolved	[redacted]
10-1-19		G	G	N	SO: BAR RE: (R) neck, (R) Eye RED. Animal Active with NEPD. (R) Neck and (R) wrist wounds resolved. (R) eye WNL - clear. No Swelling. A: D/C from OP, CTM on MH.	
					⊘ D/C ⊘ Snomed ⊘ Recharge	[redacted]
10-3-19		G	G	SS	SO BAR, RE: liquid Stool; Semi Solid stool in cage. Animal Active with NEPD. A: Semi solid stool not liquid. P: CTM on MH.	[redacted]
10/4/19	9.2				Box Weight	
10-16-19		G	G	L	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Confirmed / Unconfirmed P: CTM on MH.	[redacted]
10-17-19		G	G	L	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Confirmed / Unconfirmed P: CTM on MH.	[redacted]
10-18-19		G	G	L	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Confirmed / Unconfirmed P: CTM	Animal on PBS ex - 4-7-2020 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
9/7/19		G	G	N	SO: BAR RE: poor app; 4 WHOLE CHOW, 1 PARTIAL LEFT IN CAGE. READILY ATE TREATS. NEPD	
					A: 1ST REPORT FOR POOR APP, SUSPECT 2° TO RECENT SEDATION	
					P: CIM ON MA	[redacted]
7/12/19		G	G	N	SO. BAR LTOP diarrhea A: Resolved diarrhea on PBS P: CONT PBS indefinitely & MONITOR LTOP	
MMU [redacted] 6yrs 5mos 9.11kg M NRL03						
Probiotic Sandwich 1.00 sndwch/animal Dose; 1. sndwch Total Dose						
1.00 sndwch Volume; PO Rte; BID Freq; 180 Days; Start 10-11-2019; End 04-07-2020						[redacted]
9/20/19 14:18						
9-27-19		G	G	G	SO: BAR, RE: ABR: poor light; Animal has small wound on Right wrist and base of neck. Animal active with NEPD. A: minor trauma. P: Admit to op, VIS ✓ daily, start meloxicam and cephalexin.	
MMU [redacted] 6yrs 5mos 10.40kg M NRL03						
Meloxicam 1.5 mg/mL 0.20 mg/kg Dose; 2.1 mg Total Dose						
1.40 mLs Volume; PO Rte; SID Freq; 1 Days; Start 09-27-2019; End 09-27-2019						
0.70 mLs Volume; PO Rte; SID Freq; 3 Days; Start 09-28-2019; End 09-30-2019						
1.20 caps Volume; PO Rte; BID Freq; 5 Days; Start 09-27-2019; End 10-01-2019						
					Admit ✓ Prob. Sheet ✗	
					SO: BAR OPM/RE: (R) eye red Neck crusty small bruise underneath right eye NO Crusting of Neck observed. Readily ate treats. NEPD.	[redacted]
					A/P - See above	[redacted]
9/29/19		G	G	N	SO BAR OPM: Trauma. Neck trauma resolved. Small scab on (R) wrist Small scab underneath (R) eye No swelling or D/C MMJ	

① incorrect weight. Should read 10.4 [redacted] 9/20/19

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

23-01594_000602

UCD 0565

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/20/19 (1)	9.1				Animal #: MMU [redacted] Room#: [redacted]	[redacted]
6/28/19 (2)	9.2				Animal #: MMU [redacted] Room#: [redacted]	
(3) 7/7/19		G	G	N	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: 1st recent report P: CTM on MH & UTDP No tail train, ate PBS.	[redacted]
8/23/19	9.1				Animal #: MMU [redacted] Room#: [redacted]	
9-6-19	9.11				[redacted] [redacted] 9/6/2019 1.2 mls Ket. BCS= 2.5 Tartar: 0 1 2 3 4 Teeth Scaled Y N TB Test R L Eye 24hr ___ 48hr ___ 72hr ___ ANIMAL MONITORED UNTIL RECOVERED	[redacted]

(1) Last record entry - 08/09/2019 - [redacted] (2) Last record entry 08/09/19 - [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
5-10-19		P	G	CC	SO: BAR ① RE: poor app to chow: Chow pulled by staff. treats to them, Animal gets lots of training treats throughout day and 10 chow at night. Animal seems to prefer treat over chow.	
					A: Poor App 2nd report.	
					P: ctm on mth, requested wt ✓ ☒	[redacted]
5/13/19		G	G	N	SO: BAR RE: POOR APP; ate PBS, noted 2 whole chow, 2 partials. Readily ate all treats.	
					A: 3rd recent poor app report	
					P: ctm on MH, if reports cont., consider admit + supps.	[redacted]
5/17/19	9.3					[redacted]
5/30/19					moved → [redacted] move # 19-341	[redacted]
6/2/19		G	G	L/SS	SO: BAR, RE: liquid; readily took treats, NEPD, A: 1st recent report for diarrhea P: CTM on routine MH	[redacted]
7/22/19		G	G	N	SO: BAR ~~OPM~~ ① LTOP: Diarrhea. Currently on PBS.	
					A: stable stool quality on PBS	
					P: CTM on LTOP, cont tx as planned	[redacted]
8/9/19	9.0					[redacted]
					Animal #: MMU [redacted] Room#: [redacted]	
	7/12/19 ②				Box weight - 9.0	
						[redacted]

① RC [redacted] 8/2/19 ② Lost record entry - 08/09/19 - [redacted]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted] **California National Primate Research Center** Page # 93

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials

PHYSICAL EXAM

Date 3/25/19 Weight 9.83 BCS 2.5

HR 144 RR 30 TEMP 98.1 ☐ Project Code ☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NE, clean pump

Animal may be unpaired or individually housed while receiving veterinary care

S: Received sedated, last diarrhea report on 4/1/19

A: Stable on long term PBS

P: CTM on LTOP, extend PBS tx

MMU [redacted] M
5yrs 11mos 11.24kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose
1.00 sndwch Volume — PO Rte, BID Freq, 365 Days
Start 10-11-2018 End 10-10-2019
Extended

3/25/19 1.3 MLS KETMINE IM, BLED_____MLS, ROOM ROUND UP,
TB TEST LEFT EYE 24HR---- 48HR---- 72HR----, ANIMAL MONITORED UNTIL RECOVERED
WT: 9.83

Date	Weight	Appetite	Hydration	Stool	Observations	Initials
3/19/19	①	G	G	N	SO: BAR LTOP diarrhea A/P see 3/25	[redacted]
4/5/19	10.44					[redacted]
5/3/19						
5/6/19					Moved to [redacted] M/# 19.286	[redacted]
5/4/19		? F/P	G	N	SO: Poor animal moved into new cage on Monday & is only eating ~2 bites/day for the last 3 days. Stool is well formed today but was noted to be a bit soft by lab staff. 5/7 IM N stool on PBS P. CTM on LTOP & cont PBS tx indefinitely	[redacted]
5-9-19	②	P G	G	CC	SO: BAR (P) RE: Poor app 10 chow: unable to assess appetite, chow pulled by staff. No chow in cage. Animal gets training treats all day long.	[redacted]

① LE [redacted] 3/26/19 ② RE [redacted] 5-9-19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/10/19					A: Stool N to SS on PBS	
					P: J AHS 1x/wk, if no liquid	
					stool in next 3 weeks then	[redacted]
					assess to D/C to LTOP	[redacted]
1/11/19	10.78					[redacted]
1/11/19		G	G	CC	SO: BAR OPM: Diarrhea. No MH reports for LS.	[redacted]
1/14/19		G	G	N	SO: BAR OPM: Diarrhea; No liquid stool observed, NEPD.	[redacted]
1/17/19					A/P: See 1/10	[redacted]
1/23/19		G	G	N	SO: BAR OPM. Diarrhea; No liq. stool seen. PBS	
					ends 4/8/19, NEPD.	[redacted]
1/24/19					A/P: See 1/10	[redacted]
1/25/19	10.78					[redacted]
1/25/19		G	G	N	SO: BAR OPM: diarrhea. Normal	[redacted]
					stool present in cage pan	[redacted]
1/29/19		G	G	N	SO: BAR OP: diarrhea; normal stool today A: no	
					recent reports for liquid, maintaining normal stool	
					on PBS P: D/C to LTOP and cont PBS	[redacted]

⊗ D/C ⊗ Snomed ⊗ Recharge

2/8/19	11.10					[redacted]
2/22/19	11.06					[redacted]
3/13/19	10.48					[redacted]
3/22/19	10.59					[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
12/12/18	cont.				CTM on OPM 1X/wk. [redacted] ② Recharge	[redacted]
(1) 12/14/18	10.60					[redacted]
12/11/18		G	G	N	SO: BAR , Re: Poor appetite. Ate all chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH/OP 1X/WK — NEPD, ate PBS.	
						[redacted]
12/17/18		G	G	N/SS	SO: BAR OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: hg still improving on tx. P: CTM 1x/wk on OPM — Mostly normal, small amt. semisolid. Ate PBS + fiber dot, NEPD.	
						[redacted]
(2) ~~12/18/18~~ 12/24/18		G	G	N	SO: BAR Re: Red face. Noted mild erythema on face, looks "flushed/blushed". A: NEPD P: CTM on MH & OPM 1x/wk.	[redacted]
12/24/18		G	G	N	SO: BAR OPM: Diarrhea; Ate PBS, only normal stool seen in cage, NEPD.	[redacted]
12/29/18					A: Tylenol ended 12/19, stool remains normal	
					P: CTM 1x/wk on OP, Maintain on PBS	[redacted]
12/28/18	10.58					[redacted]
1/1/19		G	G	SS	SO: BAR, OPM: Diarrhea. Re: Liquid stool. Ate PBS. A/P: See above per DVM 12/27/18	[redacted]
1/4/19		G	G	CC	SO: BAR OPM: Diarrhea.	
1/7/19		G	G	N/SS	SO: BAR OPM: Diarrhea, Mostly normal stool seen, small amount semisolid. NEPD ate PBS.	[redacted]

MMU [redacted] M
5yrs 8mos 11.24kg NRL02

Probiotic Sandwich
1.00 sndwch/animal Dose — 1. sndwch Total Dose
1.00 sndwch Volume — PO Rte — BID Freq — 180 Days
Start 10-11-2018 End 04-08-2019
[redacted] Extended

(1) LD 12/17/18 [redacted] ② EX 12/24/18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

MMU

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
11-21-18		G	G	SS/L	SO: BAR OPM: Diarrhea, only observed SS + Loose	
					stool on bottom of cage. Animal just started on	
					Tylosin (12-19-18). L arms lesions healed.	
					A: Diarrhea, ⓒ lesions healed.	
					P: CTM on OP 1x/wk, CTM on MH, cont tylosin	[redacted]
11/22/18		P/F	G	N	SO: BAR , Re: Poor appetite. Ate 1 chow and did/did not eat forage, did/did not eat fresh fruit / treats. + Ate PBS.	
					A: Poor, Fair, Good appetite. ___ recent confirmed report.	
					P: CTM on MH / OP	[redacted]
11-26-18		G	G	N	SO: BAR- OP: Diarrhea: Stool normal today,	
					Animal responding to tx. Active with N&PD	[redacted]
11-28-18		G	G	N	S/O: BAR. OPM(diarrhea). On PBS (ending 1/8/18). Stool quality improved on tx. P: Continue tx as prescribed. CTM for one week beyond completion of tx to ensure no recurrence off tx. also on Tylosin until 12/19/18. CTM on OP 1x/wk	
						[redacted]
11/30/18	12.32					[redacted]
12/3/18		G	G	N	SO: BAR OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. Ate PBS, N&PD.	
					A: improved stool quality on tx	
					P: CTM 1x/wk on OPM	
12/5/18					A: Diarrhea (chronic intermittent). P: ①	[redacted]
					resolving on Tylosin + PBS tx. P: CTM 1x/wk	
					on OPM cont. Rx, extend inulin.	[redacted]
					ⓒ Recharge	
					[redacted]	[redacted]
12/10/18		G	G	N	SO: BAR OPM Diarrhea, N&PD, no liquid stool seen in	
					cage.	[redacted]
12/12/18					A: Liq. Stool improving on Tylosin tx. P: Cont.	
					Tylosin (ends 12/19), PBS + inulin until end +	[redacted]

MMU [redacted] M
5yrs 7mos 10.94kg NRL02

Fiber Inulin
2.00 chw/animal Dose — 2. Chew Total Dose

2.00 Chew Volume — PO Rte — SID Freq — 14 Days
Start 12-05-2018 End 12-18-2018

① RE wrong letter. [redacted] 12/5/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
11/16/18	10.99					[redacted]
					Animal #: [redacted] Room#: [redacted]	
11/15/18		G	G	SS	SO: BAR Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: Semi solid, not LS. P: CTM on OP 4MH.	[redacted]
11/17/18		G	G	L SS	SO: BAR Re/OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: On tx. Confirmed / Unconfirmed P: CTM 1X/wk + routine MH. recent cage clean - small amount liquid stool, very small amount semi-solid stool. Noted 1 pinpoint lesion @ (L) bicep - c+D scabbed. Ate PBS.	[redacted]
11/18/18					SO: BAR Re/OPM: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: On tx. Confirmed / Unconfirmed P: CTM OPM 1X/wk, routine MH. Ate PBS. (L) bicep lesion unchanged.	[redacted]
11/19/18		G	G	L	SO: BAR, OPM: Diarrhea, (L) arm lesion, Re: liq stool; ate PBS, liquid stool present in cage. (L) bicep lesion unchanged from 11/17 observation. A: liquid stool on tx. P: vet assess, consider adding Tylosin per Vet.	[redacted]
11-20-18					SO: Animal discussed with lab staff and senior vet. The amount of fruit/vegetables does not seem to be effecting/causing diarrhea. On PBS (1.8.18). Senior vet discussed starting on Tylosin with lab staff for 30 days. A: Diarrhea P: Start tylosin PO, 30 days. visV 1X/wk, CTM/ontMH	[redacted]

MMU [redacted] M
5yrs 7mos 10.94kg NRL02

Tylosin 100 mg/tablet
20.00 mg/kg Dose — 219 mg Total Dose

2.20 tabs Volume — PO Rte — SID Freq — 30 Days

Start 11-20-2018 End 12-19-2018

[redacted] 11-16-18

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/29/18	cont.				healed w/ scarring. NEPD. Itching cageside	
					A: Healed (L) arm lesion. Resolving diarrhea.	
					P: CTM on OPM 1x/wk, reassess to d/c from	
					OPM in 2x wks if stool consistency normal	[redacted]
10/31/18					AP: See 10/29 entry.	[redacted]
11/2/18	11.20					[redacted]
11/5/18		F	G	L/SS	SO: BAR, OPM: Diarrhea, (L) arm lesion, Ate PBS, 3 L arm	
					lesions, 1 is ~0.25 cm², 1 is ~0.5 cm². lesions C+D, scabbed,	
					very mild erythema. Stool is mostly loose w/ some semi-solid	
					NEPD. A: Diarrhea on tx P: CTM on OP 1x/wk, if liquid	[redacted]
					stool continues, consider starting abx.	
11/6/18		G	G	SS/L	SO: BAR, OPM: Diarrhea, (L) arm lesion, Ate PBS, stool appears	
					mostly semi solid w/ small amount of liquid. Noted 3 (L)	
					bicep lesions - 1 pinpoint lesion, 2 ~0.5 cm².	
					A: stool quality improvement, poss. increasing arm lesions.	
					P: CTM on OP 1x/wk + routine MH.	[redacted]
11-13-18					Unable to look at Animal due to room	
					testing, try again on 11-14-18.	[redacted]
11.14.18		G	G	L/S	SO: BAR (P) OPM: Diarrhea / L arm lesions.	
					Confirmed liquid stool and some soft stool	
					No other reports wut 1 this month	
					on MH. (L) arm lesions are still present	
					and are dry, not scabbed ~5mm diameter	
					Currently on PBS long-term (1.8.18).	
					Animal has been responsive to Tylosin.	
					A: Diarrhea + L/arm lesions	
					P: CTM on OP 1x/week + routine MH. If diarrhea	
					persists or worsens consider adding tylosin	[redacted]

D.C. [redacted] 11/14/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/mL; Dexmedetomidine 0.50mg/mL; Ribavirin 5.0 mg/mL; Dizepam 5.0 mg/mL

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/22/18		G	G	N SS	SO: BAR OPM: diarrhea RE: ① side trauma unchanged;	
					ate PBS, good amount normal stool w/ a small amount	
					semi-solid. 4 pinpoint lesions on ① bicep. 2 of them	
					appear freshend w/ very mild swelling + erythema.	[redacted]
10/20/18 ①		F	G	N	SO: BAR ~~OPM: diarrhea~~ OPM: Diarrhea ② RE: lixit not	
					connected. Animal moving around cage	
					well accepting fruit. A: Stable animal	
					P: lixit to be reconnected based on Nova	
					taken on smallest animal.	[redacted]

Animal #: [redacted] Room#: [redacted]

10/18/18		F-G		SS	SO: BAR, RE: Poor App (lo chow) Bpartial chow	
					small pieces. Ate scratch. Ate PBS. NEPD.	
					A: Semi Solid stool on PBS	
					P: CIM on OPM/MH on PBS	[redacted]

10/24/18		G	G	N	SO: BAR. RE: ① arm trauma. Noted sm. abrasions	
					~4 @ ⓟ bicep, abrasions appear cab, scabbed.	
					A: Abrasions healing by 2 int. no tx needed	
					@ this time. P: CIM on OP & MH.	[redacted]
					$1/P2 · See 10/18 plan / entry.	[redacted]
10/26/18		G	G	SS	SO: BAR, OPM: Diarrhea. RE: ① arm trauma.	
					Ate PBS. (2) pinpoint lesions on ① arm minor	
					C+D w/ mild erythema, fresh. Ate treats NEPD.	
					A: Semi solid stool on PBS, ① arm pinpoint	
					lesions - NEPD.	
					P: CIM on OPM 1x/week on PBS	[redacted]
10/29/18		G	G	N	SO: BAR. OPM: Diarrhea / ① arm lesion; ① arm lesion	[redacted]

① Late entry [redacted] 10/22/18 ② RE: [redacted] 10/22/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
10/7/18		G	G	SS/L	SO: BAR Re: digst'l ; animal is bright and interactive	[redacted]
10/8/18		G	G	L	SO: BAR, Re: liquid stool. OPM: Diarrhea,	
—					Ate fiber inulin dst.	[redacted]
10/10/18		G	G	L/N	SO: BAR OPM: Diarrhea. Re: Liquid Stool.	
—					A: Liquid Stool on Rx	
10.10.18					Moved to [redacted] M/O 18-579	[redacted]
10/10/18					A: Decline in stool off PBS	
MMU [redacted] M 5yrs 5mos 11.24kg NRL02					P: Restart PBS, end inulin. VAHS	[redacted]
Fiber Inulin 2.00 chw/animal Dose; 2. Chew Total Dose					1x/wk + as required	[redacted]
2.00 Chew Volume; PO Rte; SID Freq; 5 Days; Start 10-06-2018; End 10-10-2018						
Probiotic Sandwich 1.00 sndwch/animal Dose; 1. sndwch Total Dose						
1.00 sndwch Volume; PO Rte; BID Freq; 90 Days; Start 10-11-2018; End 01-08-2019						
10/15/18		G	G	N	SO: BAR OPM: Diarrhea; Good amount of normal stool	
					seen in cage. Readily ate treats, NEPD. A: Improved	
					stool on rx. P: if stool continues to improve, consider	
					ending PBS early, ctm 1x/wk + as reported.	[redacted]
10/18/18					A: Chronic diarrhea, stable on PBS	
					P: VIS ✓ 1x/wk, if stool is	
					consistently normal for 1 mo, assess	
					to D/C to LTOP. Continue PBS	[redacted]
					long term	
10/21/18		F	G	N SS	SO BAR OPM: Diarrhea. Re: (L) arm trauma; 3 pinpoint	
					lesions on (L) bicep. Sparce hair surrounding areas, C+D.	
					No active picking/scratching seen. Stool quality mostly	
					normal, small amount semi-solid stool.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/24/18		G	G	N	SO: BAR, OPM: Diarrhea / Darm lesion.	
					Darm lesion C&D w/mild erythema.	
					Ate PBS. No picking. NEPD.	
					A: Normal stool on PBS w/stable	
					Darm lesion healing by 2° INT.	[redacted]
9/26/18		G	G	N	SO: BAR OPM: Diarrhea, ① arm lesion,	
					① arm lesion completely healed	
					A: Normal stool on PBS, arm lesion resolved	[redacted]
					P: ✓ AAS 1x/wk	[redacted]
9/28/18		G	G	L	SO: BAR, Re: vomit - Re: Liquid stool.	
					Ate PBS. Dried vomit in cage. Ate	
					treats. NEPD. Ate treats.	
					A: Clean cage, confirmed vomit	
					unconfirmed Liquid stool on PBS	
					P: CTM on Rx on OPM/MH	[redacted]
10/3/18		G	G	N	SO: BAR OPM: Diarrhea	
					A: stool is normal on PBS	
					P: Allow PBS to end as scheduled,	
					offer fiber @ end of PBS. Assess	
					to D/C to LTO P if stool	[redacted]
					remains normal on fiber	[redacted]
10/4/18		G	G	SS	SO: BAR, OPM: Diarrhea. Re: Liquid stool.	
					A: Semi solid stool on Rx and PBS	[redacted]
10/5/18		G	G	L	SO: BAR, OPM: Diarrhea. Re: Liquid stool.	
					Ate PBS. Confirmed Liquid stool.	
					A: Liquid stool on PBS	[redacted]
10/6/18		G	G	N-SS	SO: BAR Re: liquid stool. A: Noted N-SS stool in pan,	
					not liquid. P: CTM on OP 1x/wk & routine MH.	[redacted]

Recharge

[redacted]

MMU[redacted] M

5yrs 5mos 11.24kg NRL02

Fiber Inulin

2.00 chw/animal Dose — 2. Chew Total Dose

2.00 Chew Volume — PO Rte — SID Freq — 60 Days

Start 10-06-2018 — End 12-04-2018

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/2/19	cont				A: PA unconformed	
					P: CTM on OPM 2x/w until Nx	
					date. Supportive care PRN	[redacted]
1/3/20		P/F	G	N	SO: BAR. OP: cranial implant. Re: poor app., pair ate 2 chow	
					according to chow log. Actively eating treats on observation.	
					Adequate stool production. Implant margins CDI. NEPD.	
					A: 2nd recent report of PA	
					P: CTM on OP 2x/wk until endpoint.	[redacted]
					S02: Micro: 1+ Staph coag neg	
					1+ candida glabrata	
					~~1+ Cab~~ ①	
					A2/P2: See above	[redacted]
1/6/20 MMU [redacted] 1.4 MLS KET IM/ D→ 6012 W/O 4379 NRL03						
WT: 13.95						
						[redacted]
1-6-20					GIVEN 0.3 ML DEXMED FOR SEDATED RECORDING	[redacted]

① RC [redacted] 1/3/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12-30-19						
					Cranial Implant CLEANING	
					1.5 mls Ketamine 0.3 mls Dexmedetomidine/Atipamizole	
					reversal or chaired cleaning	
					Implant/post edges cleaned and hair trimmed	
					Novisan/Betadine was used to clean the implant.	
					Discharge: Y (N) slight.	
					Amount of discharge: N/A	
					Color: — trace tan discharge.	[redacted]
					Additional Treatment: N/A	
12/31/19					SO: Evaluated while sedated. Very small	
					amount of opaque tan discharge at	
					posterior skin margin. Collected culture	
					& cytology of skin margin & port.	
					Port has no new discharge. No erythema	
					A: Cytology from last week indicates	
					on going presence of yeast. E. coli infection	
					appears controlled by TMS	
					P: VS ✓ 2x/wk, continue abx	[redacted]
12/30/19	MMU [redacted]				1.5 MLS KET ~>D 6012 W/O 4231 NRL03	
WT: 13.83	CAGE TIME 11:55 15MIN 3 30MIN ____ 45MIN ____ 1HR ____ 1.25HR ____ 1.5HR ____ 1.75HR ____ 2HR ____					[redacted]
12/31/19		?	G	N	SO: BAR (P) OPM: cranial implant RE: Head crusty; Imp. margins	
					CDI, ↓ attn. paid. MMU active & readily accepts treats, ↓	
					partial chow b/t cages. Interactive, good mentation.	[redacted]
					A/P: see 12/30.	
12-31-19					S: BAR (P) OPM: cranial implant - implant margins	
					CDI, mild ring of erythema @ implant margins.	
					A/P see 12/30	[redacted]
1/2/19		G	G	N	SO: BAR OPM: cranial implant RE: PA	
					Eagerly ate banana, adequate stool in	
					cage pan, 1 chow remains. Implant	
					CDI w/ clean margins. very active	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/24/19		G	G	N	SO: BAR OP: CRANIAL Imp; Ø DISCHARGE,	
					SWELLING OR ERYTHEMA. IMPLANT IS C&D.	
					READILY ATE TREATS, NEPD	[redacted]
12/25/19		G	G	N	SO: BAR OP: CRANIAL Imp; IMPLANT IS	
					C&D W/ Ø DISCHARGE, SWELLING OR ERYTHEMA.	
					READILY ATE TREATS, NEPD	[redacted]
12/26/19		G	G	cc	SO: BAR OP: CRANIAL Imp; IMPLANT IS	
					C&D W/Ø DISCHARGE, SWELLING OR ERYTHEMA.	
					READILY ATE TREATS, VERY BRIGHT & ACTIVE	
					W/NEPD	[redacted]
12/26/19					SOA: Animal is doing very well	
					on AB Rx No d/c, swelling or erythema	
					noted. Cont AB Rx (1/13) animal	
					twice (2x's) per week. Provide supportive	
					care PRN	[redacted]
12-27-19	13.30					[redacted]
12/27/19					SO: NOTED WT ↓ SINCE 12/23. ANIMAL HAS	
					HAD A GOOD APPETITE W/ NEPD	
					A: POSSIBLE WT LOSS	
					P: RE✓ WT @ NEXT SEDATION TO CONFIRM	
					TRUE LOSS	[redacted]
12/28/19						
OP Charges Complete ⊖						
						[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12/21/19		G	G	N	SO: BAR DP: CRANIAL IMPLANT INF;	
					IMPLANT MARGINS DRY C+D. Ø SWELLING	
					OR ERYTHEMA. NEPD	[redacted]
12/23/19 MMU [redacted]					1.5 MLS KETAMINE/D→ 6012 W/O 4230 NRL03	
WT: 14.22	CAGE TIME: 11:15 15MIN 1 30MIN 2 45MIN 3 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___					
12/22/19		?	G	CC	SO: BAR, OPM: Cranial implant; Ate 5 chow 12/21 per food log,	
					& this AM. MMU readily ate treats, active. Imp. appears	
					C+D, & exudate or attn. paid.	[redacted]
12-23-19						
					Cranial Implant CLEANING	
					1.4 mls Ketamine 0.03 mls Dexmedetomidine/Atipamizole	
					reversal or ~~chaired cleaning~~	
					Implant/post edges cleaned and hair trimmed	
					Novlsan/Betadine was used to clean the implant.	
					Discharge: (Y) / N Slight, mostly dry	
					Amount of discharge:	
					Color: Serosanguinous	
					Additional Treatment: N/A	
						[redacted]
12/23/19		WNL	G	SS	SO: BAR, recovered post sedation. Implant + margins	
					C+D.	[redacted]
12/23/19					SO: Examined while sedated, skin margin	
					has no erythema, could not express	
					any discharge. R cranial margin dehis	
					up side of implant. Per labs left-propately	
					removed to check 1 day post last 2 wks	
					cleaning. Port has only dried discharge,	
					primarily just under cap. Collected rev	
					cultures + cytology.	
					A: Skin margin improved on tx	
					P: Endpoints currently scheduled to be 1/13,	
					via ↓ daily + extend abx, AV updated by SRA	[redacted]

MMU [redacted] M
7yrs 8mos 14.36kg NRL03

Trimethoprim/Sulfa 8 mg/m
4.00 mg/kg Dose — 57 mg Total Dose

7.20 mLs Volume — PO Rte — TID Freq — 25 Days

Start 12-20-2019 End 01-13-2020

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 42

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/17/19		G	G	N	SO: BAR (P) OP: Cranial implant; mild crusting around implant,	
					biopatch removed. ↓ swelling, normal mentation + mvmt.	[redacted]
12/18/19		G	G	N	SO: BAR (P) OP: Perioc/Implant; ↓ swelling,	
					very mild crusting around implant.	
					Moving well w/ NEPD	[redacted]
12/19/19		G	G	N	SO: BAR (P) OP: Cranial Imp / RE: crusty	
					Head; ↓ swelling, mild crusting around	
					Implant. NEPD	[redacted]
12/20/19					Culture of skin margin shows few	
					colonies of E. coli + low lever coag. (-)	
					Staph. - improved w/ topical tx.	
					Port culture shows 3+ E. coli (Enro	
					resistant) and 2+ Candida glabrata.	
					Vet consensus - candida cannot be	
					cleared as explant isn't an option.	
					E. coli unlikely to be cleared	
					due to inaccessible location within	
					implant and antibiotic resistance.	
					A: Implant infection	
					P: Consulted w/ project staff about	
					coordinating necropsy for next week,	[redacted]
					continue to monitor daily in OP	[redacted]
					P2: start TMS to address E. coli infection until endpoint.	[redacted]
					P Please see vet staff email from 12.20.19	[redacted]
12/20/19		G	G	N	SO: BAR (P) OP: Cranial Imp. Infection;	
					RE: Head crusty; very mild amount of dried	
					exudate around Implant. NEPD, not attentive	
					To area. moving well	[redacted]

MMU [redacted] M
7yrs 8mos 14.36kg NRL03

Trimethoprim/Sulfa 8 mg/m
4.00 mg/kg Dose — 57 mg Total Dose

7.20 mLs Volume — PO Rte — TID Freq — 7 Days

Start 12-20-2019 End 12-26-2019

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ⊕	Hydration (G, F, P) ⊕	Stool (N, SS, L, B) ⊕	Observations	Initials
12/16/19	MMU [redacted]				1.6 MLS KETAMINE/ D->1302 W/O 4141 NRL03	
WT: 14.36	CAGE TIME 11:50	15MIN 3	30MIN	45MIN	1HR 1.25HR 1.5HR 1.75HR 2HR	[redacted]
12/16/19		G	G	N	SO: BAR, OPM: Peri-oc swelling/implant; implant margins c+D post cleaning, & attn paid. OU WNL, peri-oc swelling appears resolved. Inc healed w/ minor scab just ↑ prow.	[redacted]
12/16/19					SO: Evaluated while sedated, skin margin has no swelling, small amount of fibrin and a very small area of erythema (very mild) on the R cranial margin. Skin rolls up on implant in this region. Collected culture + cytology, palpated around implant and expressed a small amount sero-sanguinous fluid. Collected additional cytology. Port opened and only a small amount of residual fluid present - culture collected. Implant cleaned + port recording performed. Applied Ketoconazol/Chlorhexidine	
					A: Decreasing discharge, culture from 12/9 found few colonies staph (coag ⊖) and 2 ⊕ candida glabrata. Off Dexmedetomidine as of 12/8	
					P: Await cytology, treat w/ topical antifungals PRN @ sedated cleaning, and await new culture results	[redacted]
12/16/19					Preliminary cytology shows large neutrophilic response w/ some macrophages with no phagocytosed organisms. Small numbers of cocci + yeast observed. see P above	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/13/19		G	G	N	SO: BAR (P) OP: PERIOC SWLN / IMPLANT; MOISTURE + DRIED BLOOD AROUND IMPLANT. MILD PERIOCULAR SWELLING. ANIMAL SHOOK HEAD ONCE DURING OBSERVATION. NOT ATTENTIVE TO AREA. READILY ATE TREATS.	
					A/P: SEE 12/12 ENTRY	[redacted]
12/14/19		G	G	N	SO: BAR (P) OPM: periorbital swelling / implant; mild periocular swelling dried serosanguineous d/c @ caudal aspect of port + cloudy serosang d/c @ rostral + lateral aspects of port. Incision CDI. NEPD. Not picking port cageside. A: Periocular swelling + serosanguineous d/c around port w/ preliminary bacteria + yeast. P: See 12/12 entry.	[redacted]
12/15/19	14.3kg	G	G	N	SO: BAR (P) OPM: periorbital swelling / implant; mild periocular swelling. Incision CDI. very mild dried serosanguineous fluid dried around port. mild serosanguineous fluid @ caudal aspect of port. No picking cageside. NEPD. Readily ate treats. A: Resolving periocular swelling. Mild d/c from port site. P: See 12/12 entry.	[redacted]
12/16/19					Cranial Implant CLEANING ~~0.25~~ mls Ketamine 0.3 mls Dexmedetomidine/Atipamizole reversal or ~~chaired~~ cleaning Implant/post edges cleaned and hair trimmed Novlsan/Betadine was used to clean the implant. Discharge: (Y) / N Amount of discharge: minimal Color: serosanguinous Additional Treatment: ephys recording collected.	Cytology and ① tooth cultures collected and submitted. [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

① recording error [redacted] 12/16/19

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/11/19	cont				Head inc: CDI w/mild scabbing - Lip lesion	
					C+D w/ scabbing - very active. NEPO.	
					A: Confirmed mild periocular edema (L) eye	
					on Tx, Implant intact w/mild d/c at	
					margins, Lip lesion healing by 2° INT	
					P: V/s ✓ Daily on OPM	
					Finish Ketoprofen (12/12), Await labs	[redacted]
12/12/19		F	G	cc	SO: BAR, grate paired, OPM: Periocular Swelling	
					Cranial Implant, Implant Intact w/mild	
					serous d/c at caudal aspect of implant, dorsal	
					aspect of implant has mild serous d/c w/mild	
					prulent d/c. Head inc: CDI w/mild scabbing.	
					(L) eye has mild periocular edema no	
					change since 12/11 d/2 open. No periocular	
					erythema. Intermittently shakes head during	
					observation. Pupils WNL. Lip lesion C+D	
					scabbed.	[redacted]
					SO2: Re: (L) side eye swollen, Re:	
					Head crusty. See above.	[redacted]
12/12/19		CC	G	N	SO: BAR 5m out of st. purulent d/c	
					@rostral aspect of implant, serosanguinous	
					d/c dried @ caudal aspect. Periocular	
					edema OS persists A: Preliminary culture	
					results from 12/9 - Staph Coag Neg O/a	
					few yeast A, cont d/c @ crem implant	
					cont periocular edema - P: Re-Mon when	
					consider cytology & culture	[redacted]
					CTM daily until monday	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/9/19					SO: Animal sedated for implant eval, cleaning + neurorecording. Admin 0.4 ml dex./atrop, Cleaned off incision & implant w/ DW3 after obtained a culture from port (sm amt of sl. yellow creamy d/c from the port rostrally) Trimmed suture tags + scabs off. Performed neurorecording. Replaced port cover w/ sterile one, biopatch dermabonded on. ½ Good incision, sl. gaps @ crn + caudal aspect P: CTM PO 12/10 ✓ incision again on 12/12 to ensure closure. Encourage intake. Await culture results.	[redacted]
12/9/19 MMU [redacted] LOCATION [redacted] / 1-4 MLS KET						
WT: 14.43	CAGE TIME 11:30 15MIN 3 30MIN ___ 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___					[redacted]
12/10/19		F	G	N	SO: BAR. POM; FO: L eye swollen, inc. + implant margins c/d, scabbed. Minor abrasion ↓ septum c+d, scabbed. ~40% ↓ palp. fissure L eye, no erythe., d/c, or rubbing seen, mild-mod. period. swelling. A: Period. swelling ↓, otherwise stable PO. P: d/c from POM, CTM on OP daily + on MH. update project	
MMU [redacted] M 7yrs 8mos 14.43kg NRL03						
Ketoprofen 100 mg/mL 5.00 mg/kg Dose; 72 mg Total Dose; 0.70 mLs Volume; IM Rte; SID Freq; 3 Days; Start 12-10-2019; End 12-12-2019						
☒ D/C						
☒ CHARGES COMPLETE					Admit ☒ Prob. Sheet ☒	[redacted]
12/11/19		F	G	N	SO: BAR, OPM: Periocular Swelling. Re: D eye swollen. R/L pupils wnl. Mild periocular edema D eye, ≈½ open. No d/c at D eye. No erythema (periocular) Implant intact w/ yellow and serous d/c at margins.	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/8/19		G	G	SS	SO: BAR, sts intact, scabbed, one sts tail exposed, no significant swelling or erythema, implant appears stable, mentation & activity appear normal, noted vicination on upper lip	[redacted]
					SO2: BAR, POM; incision CDI w/ mild crusting (unchanged from 12/7), periocular edema almost resolved, bruising resolved. Good mentation, moves on + off perch when prompted. Continues to have good appetite for chow + supps. Erosion on philtrum unchanged. Not observed scratching	
					A: improved pruritus, periocular swelling, resolved bruising, improved appetite, continued semisolid stool. Overall good post-op recovery	
					P: Finish vx 12/9, assess to move to home cage [redacted]	
					implant cleaning 12/9.	[redacted]
Culture ~~RG~~ Date 12/3	Results Lside 2+ staph(CE) Rside 1+ staph(CE) in port no growth				SO3: culture results revealed normal flora from skin margin, no growth from within port itself	[redacted]
12/9/19		P	G	N/SS	SO: BAR POM Incision CDI - scab pulled up in back V, mild periocular edema Erosion on philtrum healing slowly - started to dry out + contract Good mentation sitting up brighter Mild rhinorrhea d/c, crusting rostral to port. A: Good po recovery Incision healing well by 1st int, much improved appetite + improved stool qual Erosion slowly healing on philtrum P: Sedate for eval + cleaning of port Neurorecording + move to new cage	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/6/19					No neurosigns. Good mentation - laughter off valium & buprenex. Often sits/sleeps hunched in front but readily gets up & moves around the cage.	
					Still mild scratching of face & neck.	
					Tech obs. mild clear nasal d/c	
					A: Improved PO recovery ① Incision CDI ② mild periocular edema & bruising ③ mild but ↓ scratching/pruritis ④ mild d/c @ rostral aspect of implant. P: Encourage intake (add chow crumbs to RC) Cont all meds, monitor closely incision, cranial implant d/c, scratching. Consider more home +/- implant cleaning monday. Extend Cef to 12/9	[redacted]
12/7/19		G	G	N	OD: BAR, ate supps. Inc CDI, scabbed. Imp. margins CDI & attn. paid. PS = 0. Minor abrasion @ mid. ↑ lip area c/d w/ mild eryth. MMU active + readily ate all treats offered.	
					A: stable post POH repair P: CTM on PO daily.	[redacted]
12/7/19					SOZ: BAR POM; incision CDI w/ mild crusting (no fresh dc) Periocular edema + bruising almost resolved. Very bright + interactive, ate 5 chow + readily took all treats offered. Erosion on philtrum unchanged. Not observed scratching.	
					Az: improved periocular edema/bruising, improved appetite, overall improved PO recovery.	
					P: see 12/16 entry	[redacted]

MMU [redacted] M
7yrs 8mos 14.75kg NRI.03

Cefazolin 330 mg/mL
25.00 mg/kg — Dose
369 mg — Total Dose

1.10 mLs — Volume
IM — Rte
BID — Freq
8 — Days
Start 12-02-2019 End 12-09-2019
[redacted] Extended

Rice Cereal
Dose — Total Dose

Volume
PO — Rte
SID — Freq
8 — Days
Start 12-02-2019 End 12-09-2019
Modified Extended
Extended, Modified | put chow crumbs in cereal

KLC s-132781 Upd06DEC:19:17 Prn06DEC:19:17

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/5/19					(prunes, RE, FRT & Veg, peanuts) and	
					worked puzzle tubes. Noted mild	
					scratching of leg & face * 2-3 suture tags	
					pulled up in & around incision	
					CPx (12/3) preop SX 2 WBC 26.1, fibrinogen	
					200, Hct 38.8, Chem 20 (12/3) Na+ 149	
					ALT 159, AST 231, CPK 15,582, LDH 2072	
					CRP 42 A ① Good postop recovery	
					exp after 2 sx in 2d ② Incision	
					clean & dry & intact	
					③ mild facial/cranial edema cont.	
					④ mild pruritis ⑤ Ponitoring/Erythema	
					resolving P. Cont to encourage to	
					eat. Cont all meds, give 2nd dose	
					of valium today @ 2 pm to	
					prevent pm picking/scratching	
					Cont POM & ✓ incision dip suture	
					tags if needed	[redacted]
12/5/19					SO: buddy moved to adjacent cage & are now	
					① ~~pair~~ grate paired (buddy = [redacted])	[redacted]
12/6/19						
12/6/19		F	L	SS	SO: BAR POM Incision is C&D&I w/ mild scab from suture tags	
					mild edema around eyes w/ mild	
					bruising on upper lids	
					Noted mild discharge rostral implant	
					yellow crusting. Philtrum erosion w/	
					fibrin from pressure dip after 2 sx. along	
					with yesterday Rx valium	

① RE [redacted] 12/5/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations (cont)	Initials
12/4/19					? bilaterally lat to the eyes (on structure) & picture @ implant. Fair amt of fresh food in & below cage, some of it loose. Fruit, dates, apples, PC, fig bars, etc. (L) upper eyelid appears mild/mod swollen. Incision intact w/ dried blood & serosanguin discharge from dorsal aspect of the incision. A: Good recovery post Sx 2 (in 2 days). Incision seems to heal by 1st int. Mild swelling/edema w/ patchy bruising. P: CM closely (cont)	
					Keppra (12/6), Dexamethasone (12/7), Cef (12/8) Lasix (12/4) & Benadryl (12/4) — IV/IM @ least 1d, Furosemide (12/7)	[redacted]
12/4/19					Sx: animal noted to be scratching face & head, picking @ incision & occasionally pulling on implant. Additionally, animal occasionally grabbing & pulling cheeks & facial skin. Per DVM - gave 1st dose Diazepam @ ~1pm. Requested additional enrichment devices @	[redacted]
12/4/19					3:30p: animal freq. picking/pulling @ face & scratching. Picking at incision. Not using additional enrichment during observation.	[redacted]
12/5/19		F	G	N/SS	SO: BAR PON, clean & intact w/ mild edema of head & face (eyes). Good mentation though v. relaxed after various IM/IV supps	

MMU [redacted] M
7yrs 8mos 13.67kg NRL03

Diphenhydramine 50 mg/mL
3.00 mg/kg Dose — 41 mg Total Dose
0.80 mLs Volume — IM Rte — BID Freq — 4 Days
Start 12-02-2019 — End 12-05-2019
[redacted] Extended
Extended

KLC 0-132945 0pd04DEC;05:23 Prn04DEC;05:23

MMU [redacted] M
7yrs 8mos 13.67kg NRL03

Diazepam 10 mg/tablet
0.50 mg/kg Dose — 6.8 mg Total Dose
0.70 tabs Volume — PO Rte — BID Freq — 2 Days
Start 12-04-2019 — End 12-05-2019

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/3/19					SO: Rec'd in [redacted] prep wo# Retro project NRL03 Surgically prepped, performed Con. Implant Repair See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert. A: Excellent recovery after 2nd sx in 2 days P: POM X 7 days, Start RX	
					✓ Charges N/A Admit ✓ RX NA Supps NA Move Sheet ✓ Surgery Log ✓ Anesthesia Log ___ Surgery Report	
					SO: CBC (12/2) WBC 16.8 (87% PMNs) fibrinogen 500 & P.P 8.9 Chem 20 (12/2) T.P 8.2, alb 4.6; Obtained rev CBC & Chem 20 today along w/ cultures around 4 in port connector tested port connector after cleaning & since it was transmitting fairly well Repair sx was elected - see Anes sheet & sx report. Applied OPAT TAO w/ dx over head & aloe over shoulders & chest to ↓ itching also elected to stop hydro & switch to buprenex to help w/ remove potential itching	[redacted]
12/4/19		F/P	G	N	SO: BAR, mild facial swelling, implant intact. Small amt sero-sang drg. @ cranial incision. Attention to implant this am, noted to be rubbing eyes - esp. R eye. Mild periocular erythema & edema noted. Notified DVM.	[redacted]
12/4/19		F	G	N	SO: BAR Animal has mild facial swelling w/ mild erythema & bruising on philtrum	

MMU [redacted] M
7yrs 8mos 14.75kg NRL03

Hydromorphone 2 mg/mL
0.15 mg/kg Dose — 2.2 mg Total Dose
Ended
1.10 mLs Volume — IM Rte — TID Freq — 2 Days
Start 12-02-2019 End 12-03-2019

MMU [redacted] M
7yrs 8mos 14.75kg NRL03

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .4 mg Total Dose
Ended
1.50 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-02-2019 End 12-03-2019

MMU [redacted] M
7yrs 8mos 13.67kg NRL03

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .4 mg Total Dose
1.40 mLs Volume — IM Rte — BID Freq — 2 Days
Start 12-04-2019 End 12-05-2019

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PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/3/19		F	G	N	S: BAR, POM: Cranial implant. Animal	
					sitting on perch ate 3/4 bannana, ate prune	
					fruit, fig bar rice cereal. No chow in	
					cage, did not eat veggie. Drank 1/4 kool-aid	
					no boost. Head inc: sts intact(s) implant	
					intact w/seroscanguineous d/c at implant.	
					Animal scratching at neck intermittently.	
					Mild periocular edema w/mild swelling	
					at head and mild bruising at (R) brow.	
					A: mild d/c at implant w/minor scratching	
					on Tx	
					P: Continue POM	
					Continue Tx	
					Vis ✓ daily	[redacted]
12/3/19		F/G	G	N	S: BAR Animal slept well overnight	
					& has continued to eat very well	
					However, animal is significantly	
					scratching all over but more so on	
					his head. Also pulling on port connector	
					which is now dislodged (no longer secured)	
					Also noting (R) brow/cheek bruising &	
					mod swelling. Mild bruising @ (R) lateral	
					canthus/cheek & on philtrum. Possible	
					increased eye edema w/ serosanguinous	
					d/c when animal pulls on implant/port	
					When animal appeared to be pulling off	
					port - elected to sedate to eval port	
					malposition & plan to remove or fix	
					1.5 mls of Ketamine IM to sedate	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Initials
12/2/19					

Observations

SO: Rec'd in [redacted] prep wo# 3852, project NRL03
Surgically prepped, performed Neuro sx
See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert.
A: Cranial Implant
P: POM X 7 days, Start RX

✓Charges ✓Admit ✓RX ✓Supps ✓Move Sheet
✓Surgery Log ✓Anesthesia Log ✓ Surgery Report

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 3 Days
Start 12-02-2019 — End 12-04-2019

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Water
1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte — SID Freq — 7 Days
Start [redacted] d 12-08-2019

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Rice Cereal
Dose — Total Dose
Volume — PO Rte — SID Freq — 6 Days
Start 12-02-2019 — End 12-07-2019

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 369 mg Total Dose
1.10 mLs Volume — IM Rte — BID Freq — 7 Days
Start [redacted] End 12-08-2019

MMU [redacted]
7yrs 7mos 14.75kg NRL03

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 443 mg Total Dose
4.40 mLs Volume — SC Rte — BID Freq — 5 Days
Start 12-02-2019 — End 12-06-2019

Prunes
Dose — Total Dose
Volume — PO Rte — SID Freq — 4 Days
Start 12-02-2019 — End 12-05-2019

MMU [redacted]
7yrs 7mos 14.75kg NRL03

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 11.1 mg Total Dose
1.10 mLs Volume — IM Rte — SID Freq — 2 Days
Start [redacted] End 12-04-2019

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Dexamethasone 10 mg/mL
0.50 mg/kg Dose — 7.4 mg Total Dose
0.70 mLs Volume — IM Rte — SID Freq — 2 Days
Start 12-05-2019 — End 12-06-2019

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Dexamethasone 10 mg/mL
0.25 mg/kg Dose — 3.7 mg Total Dose
0.37 mLs Volume — IM Rte — SID Freq — 1 Days
Start 12-07-2019 — End 12-07-2019

MMU [redacted] M
7yrs 7mos 14.75kg NRL03

Hydromorphone 2 mg/mL
0.15 mg/kg Dose — 2.2 mg Total Dose
1.10 mLs Volume — IM Rte — TID Freq — 3 Days
Start 12-02-2019 — End [redacted]

Boost
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 4 Days
MMU [redacted]
7yrs 7mos 13.67kg NRL03

Diphenhydramine 50 mg/mL
3.00 mg/kg Dose — 41 mg Total Dose
0.80 mLs Volume — IM Rte — BID Freq — 3 Days
Start 12-02-2019 — End 12-04-2019

MMU [redacted]
7yrs 7mos 14

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .4 mg Total Dose
1.50 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-02-2019 — End 12-04-2019

Maropitant 10 mg/mL
1.00 mg/kg Dose — 15 mg Total Dose
1.50 mLs Volume — SC Rte — SID Freq — 3 Days
Start [redacted]
7yrs 7mos 14.75kg NRL03

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 7 Days
Start 12-02-2019 — End 12-08-2019

SO: Right before closure the rostral & caudal feet on the external connector base (under the skin) broke off. The surgeon stated that both feet had smooth edges - not sharp at the break. Animal recovered very quickly after turning off the isoflurane. Sat up & ate right after being placed in the cage.
A: Excellent immed post op recovery
P: CTM closely overnight

6-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12-28-18	12.92				Box wt	[redacted]
1/6/19		G	G	N SS, L	SO: BAR (P) Re: Liquid stool. Stool in cage was normal, semi solid, liquid, clean cage. A: 1st recent report P: CTM on routine MH. NEPD or tailstain. Mostly normal stool b/t cages w/ small amounts semisolid & liquid.	
3/ /19					1.3 MLS KETMINE IM, BLED ___ MLS, ROOM ROUND UP, TB TEST LEFT EYE 24HR---- 48HR---- 72HR----, ANIMAL MONITORED UNTIL RECOVERED	[redacted]
WT: 12.61						[redacted]
4.25.19	13.15				Box wt	[redacted]
6-27-19	14.64				Box wt.	[redacted]
10/9/19		G	G	N	SO: BAR AAR: bld und ; ~3-4 ml blood in cage pan, no trauma or blood seen on animal, moving in cage WNL, bright & interactive, suspect pair mate A: apparently healthy animal P: CTM on routine MH	[redacted]
10-21-19		G	G	N	SO: BAR, RE: Vomit ; Cage cleaned prior to observation, no new vomit in pan. Animal active with NEPD. A: unconfirmed report of Emesis. P: ctm on MH.	[redacted]
10-28-19	14.75				Box wt	[redacted]
12/2/19					MMU [redacted] 1.6 MLS KET/ D->SURGERY PREP W.O. 3852 NRL03	
WT: 13.67					HO STAFF TO MONITOR RECOVERY	
① 12/1/19					MMU [redacted] M 7yrs 7mos 14.75kg NRL03 — Dexamethasone 10 mg/mL; 1.00 mg/kg Dose; 15 mg Total Dose; 1.50 mLs Volume; IM Rte; SID Freq; 2 Days — Levetiracetam 100 mg/mL; 14.00 mg/kg Dose; 207 mg Total Dose; 2.10 mLs Volume; SC Rte; BID Freq; 1 Days; Start 12-01-2019 End 12-01-2019	MMU [redacted] M 7yrs 7mos 14.75kg NRL03 — Famotidine 10 mg/mL; 0.50 mg/kg Dose; 7.4 mg Total Dose; 0.70 mLs Volume; IM Rte; SID Freq; 7 Days; Start 12-01-2019 End 12-07-2019	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
10/1/18						
					SO: Transported to [redacted] for MRI, project NRL02	
					WO# 3040. Sedated with ketamine 1.2 mls,	
					Animal was / was not placed in Stereotax,	
					performed MRI per protocol, recovered fully,	
					returned to CNPRC home cage.	
					Animal did/did not receive Ketoprofen or	
					Buprenex IM	[redacted]
10/2/18					CT SCAN NM	[redacted]
10/3/18					MMU [redacted] 0.93 MLS TELAZOL IM, D → SS2007/CT SCAN 3040 NRL02	
WT:					CAGE TIME 945 15MIN / 30MIN / 45MIN 2 1HR 2 1.25HR 3 1.5HR ___ 1.75HR ___ 2HR ___	
10/29/18	12.05				Box out	[redacted]
11-8-18		G	G	N	SO: BAR. (P) RE: Vomit: Small Amount of	
					Vomit (x2mls) in cage pan. Animal eating	
					well and is active with NEPD.	
					A: Confirmed Vomit report. 1st report	
					P: Ctm on MH.	
11/22/18		G	G	N	SO: BAR , RE: Vomit. Noted vomit in cage pan. CP, unable to confirm source.	
					A: Confirmed vomit. 2nd recent report.	
					P: CTM on MH / OP.	[redacted]
11/25/18		G	G	N	SO: BAR (P), RE: Vomit. Noted vomit ~10mls vomit. suspect pair	
					in cage pan. mate, possible vomit @ mouth.	
					A: Confirmed vomit. 3rd recent report. NEPD, readily ate treats.	
					P: CTM on (MH) / OP.	[redacted]
12/9/18		G	G	N	SO: BAR (P), RE: Vomit. Noted vomit in ~10 mls. NEPD, readily	
					cage pan. ate treats, unable to confirm	
					A: Confirmed vomit. 3rd recent report. source.	
					P: CTM on MH / OP.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
4/26/18	cont				P: CTM on RMH	[redacted]
5/25/18		F	G	CC	SO: BAR Re: nasal discharge + vomit. Unable to confirm either due to clean cage + absence of discharge A: 1st recent rept of both P: CM w/ repts	[redacted]
6/5/18					Cardiologist-guided echocardiogram performed due to: pre-shipment / pre-project / clinical. Preliminary Results: Normal / LVH / Suspect (await final results) Comments: __ Final Echo Result: LVH Negative	[redacted]
					6/5/18 MMU [redacted] 1.3 MLS KET IM, ~> CW1302 W/O 1607 SPF01 WT: 10.37 CAGE TIME 0:25 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___	[redacted]
					9-76 / BLED 5 MLS VIA ARMPULL W/O 1741 ARM01	[redacted]
					Stop 9/27 KET IM, BLED 3 MLS TEST R EYE 24HR 48HR 72HR MONITORED UNTIL RECOVERED	[redacted]
					9/27/18 MMU [redacted] / 1.2 ML KETAMINE BLED 3 MLS D-> 1310 W/O 2899 NRL02 TIME: 2:20 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___, 1.50HR___ 1.75.HR___ 2HRS___ WT: 11.68	[redacted]
9/27/18					✓ pre-project physical __pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]
10/1/18	11.10				BOX AND LOAD INTO TRUCK	[redacted]
					10/1/18 MMU [redacted] BOX / LOAD INTO TRANSPORT TRUCK, NRL02 W.O. 3014 WT: 11.10 CAGE TIME___ 15MIN___ 30MIN___ 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Final Necropsy Report

Animal ID	MMU [redacted]	**Report ID**	68698	**Report Complete**	27-FEB-20
Sex	M	**Death Type**	X	**Location**	[redacted]
Age	7 yrs 9 mon	**Weight (KG)**	13.95	**Work Performed**	06-JAN-20
Investigator	[redacted]	**Project**	NRL03	**Time Performed**	12:00 AM
Pathologist	[redacted]	**Clinician**		**Charge ID**	BZ59
Resident	[redacted]	**Hydration**	3	**Pathology Condition**	3

Gross Observations BODY AS A WHOLE

IFS=3/5. The skin surrounding the port is red and minimally wet with small amounts of serosanguinous fluid. The surrounding subcutaneous tissues and musculature are minimally edematous. The implant sites are grossly within normal limits. The lung lobes are pale pink and float in formalin. The gastric lumen is partially occluded by a large trichobezoar. The gastric mucosa is pale pink. The small and large intestine are empty. The cecum and colon have a thickened mucosa.

CYTOLOGY

Cytology taken from the port, under the port, between the implants and over the implants were largely acellular consisting of rare squamous epithelial cells (likely contamination). There are no inflammatory cells are bacteria in the slides examined.

Gross Diagnosis 1 STOMACH TRICHOBEZOAR-HAIRBALL

Gross Comments The trichobezoar did not result in complete occlusion and is therefore considered incidental at time of necropsy. There was also evidence of large intestinal mucosal thickening suggesting a typhylocolitis but histology is needed to confirm. Bacterial cultures and cytology samples were taken from the port and implant. Results are pending.

All tissue was collected per the NRL protocol.

Final Observations BODY AS A WHOLE

The following tissues are within normal limits:
Slide 1: Lung
Slide 2: Liver and GB
Slide 3: Spleen
Slide 4: Left kidney
Slide 5: Right kidney
Slide 6: Duodenum
Slide 7: Pancreas and duodenum
Slide 8: Jejunum
Slide 8: Ileum
Slide 12: Cervical spinal cord

HEART

Slides 13 and 14: There is moderate dissecting fibrosis and karyomegaly within the left papillarey muscle. There is mild myxomatous degeneration of the valvular leaflet.

STOMACH

Slide 6: There are moderate numbers of lymphocytes and plasma cells within the superficial lamina propia (unknown clinical significance).

Final Diagnosis 1 HEART ENDOCARDIOSIS

2 STOMACH GASTRITIS

N X

2043 2044

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

BZ59 / NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

mmu [redacted]
ANIMAL I.D.

12 / 30 / 19
DATE OF SAMPLE

M SEX | 7 YR 9 MO AGE | 13.3 KG WEIGHT

PROCEDURE IS: ☒ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Implant infection rev

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☒ YES
LIST ALL AGENTS:
TMS

SOURCE OF SPECIMEN(S) ① (green) - in port
② (red) - rostral skin margin

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC	② ✓	
☒ ANAEROBIC	①② ✓✓	✓✓
☒ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. 1/3 ① Few colonies STAPH Coagulase ~~positive~~ ① Negative
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1									

REPORTED BY: [redacted]

①CEE 1-3-20

REPORT DATE: 1/3/20

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

60082

N X

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

3259 / NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

[redacted]
INVESTIGATOR REQUESTOR

12 / 16 / 19
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M 7 YR 8 MO 14.4 KG
SEX AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS: cranial implant discharge cultured candida (2+) and

HOSPITALIZED NO ☒ YES ☐ _____ - _____ ROOM CAGE

PRIOR THERAPY ☐ NO ☒ YES LIST ALL AGENTS: Prior steroids or abx - off for 1 wk

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____hrs ☐ Anesthetized ☐ Other_____

PROCEDURE(S) REQUESTED: Cytology, gram stain, +/- additional stains if path requests

SPECIMEN: 6 slides to stain (1st, 2nd, Smear x2, Fauldate x2) 2 in reserve (3rd, 4th)

RESULTS

Diagnosis-suppurative inflammation

The suppurative inflammation described on cytology is consistent w/ the discharge noticed @ presentation. Although low numbers of yeast were seen on cytology, culture results are indicative of Candida spp. (1) ~~Skin~~ infection

[redacted]

(1) EE, wrong word, [redacted] 12/26/19

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

6264

NX

☐ VIRAL PRECAUTION

BZ591 NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

mmu [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

MISCELLANEOUS

12 / 30 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 7 YR 9 MO 13.3 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS:
Implant infection rev

HOSPITALIZED NO☐ YES ☐ _____ - _____
ROOM CAGE

PRIOR THERAPY ☐ NO ☒ YES
LIST ALL AGENTS:
TMS

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____ hrs ☒ Anesthetized ☐ Other _____

PROCEDURE(S) REQUESTED: cytology

SPECIMEN: Rostral skin margin swab x2
Swab from inside port x2

RESULTS

Compared to the samples examined on 12/16/19, these samples are consistent with reduced inflammation. There are no intracellular bacteria in neutrophils or macrophages. The bacteria visualized are diplococci and cocci, Gram +, and are on the surface of keratinocytes.

[redacted]

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

29-36

☐ VIRAL PRECAUTION

BZ59 / _____
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

NX

[redacted]
ANIMAL I.D.

1 / 6 / 2020
DATE OF SAMPLE

ANIMAL DATA: _____ - _____
ROOM CAGE

_____ SEX _____ YR _____ MO _____ KG
AGE WEIGHT

PROCEDURE IS: _____ DIAGNOSTIC AID _____ COLONY MANAGEMENT _____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
infected implant

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS: Antibiotics

SOURCE OF SPECIMEN(S)
(1) implant 1
(2) 2
(3) 3
(4) 4
(5) LF BTW implant
(6) RT BTW implant
(7) port
(8) under port

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC 2, 3, 4, 8		✓✓✓✓
☐ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. Implant 1 : Isolated from thio broth - Staph coagulase negative
2. LF BTW Implant: 1 colony Staph coagulase negative
3. RT BTW Implant: 1+ Staph coagulase negative
4. Port: 1+ Staph coagulase negative
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 1-10-20

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

2015-2016

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

BZ59 / NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

mmu [redacted]
ANIMAL I.D.

12 / 23 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M SEX | 7 YR 8 MO AGE | 14.4 KG WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: ☐ DIARRHEA
cranial implant re-check

HOSPITALIZED NO ✓ YES ☐

PRIOR THERAPY ☐ NO X YES TMS
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) #1 (green) - implant skin margin (rostral)
#2 (red) - inside port

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
X AEROBIC		
X ANAEROBIC	#1 ✓	#2 ✓
X FUNGI/YEAST ~~#1~~ ①		#1 ✓
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. #1 Aerobic: 1+ Staph coagulase negative
2.
3. #2 Aerobic: 1+ Candida glabrata
4. Fungi/Yeast: 1+ Candida glabrata
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1			R	R	R		R		S

REPORTED BY: [redacted]

REPORT DATE: 12-27-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

① EE [redacted] 12-27-19

23-01594_000638

UCD 0601

AMENDED REPORT - CHART COPY

1984-1985

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

B259, NRL 03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

[redacted]
ANIMAL I.D.

12 / 16 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M SEX | 7 YR 8 MO AGE | 14.4 KG WEIGHT

PROCEDURE IS: ✓ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Cranial implant discharge
- prev. candida growth

HOSPITALIZED ☒ NO ☐ YES ☐

PRIOR THERAPY ☐ NO ☒ YES Prior Ceftriaxone w/x
LIST ALL AGENTS: off for 1 wk
#1 med - inside recording port
#2 - Cranial implant - rostral sk

SOURCE OF SPECIMEN(S)

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC #1 & #2	✓✓	
☒ FUNGI/YEAST	✓ #2	
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. #1 - Aerobic: 3+ E. coli
2. Fungi/yeast: 2+ Candida glabrata
3.
4. #2 - Aerobic: 1+ Staph coagulase negative
5. Few colonies E. coli
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1	S	S		S	R	S		S	
4			S	S	S		S		S
5	S	S		S	R	S		S	

REPORTED BY: [redacted]

REPORT DATE: 12-19-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

AMENDED REPORT

1984-1985

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

B259, NRL 03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

[redacted]
ANIMAL I.D.

12 / 16 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M SEX | 7 YR 8 MO AGE | 14.4 KG WEIGHT

PROCEDURE IS: ✓ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Cranial implant dislodge - prev. candida growth

HOSPITALIZED NO ☐ YES ☐

PRIOR THERAPY ☐ NO ☒ YES Prior steroids etc
LIST ALL AGENTS: off for 1 wk

SOURCE OF SPECIMEN(S) #1 pet - inside recording port
#2 open cranial implant - bacterial s

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC #1 & #2	✓✓	
☒ FUNGI/YEAST	✓ #2	
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. #1 - Aerobic: 3+ E. coli
2. Fungi/yeast: 2+ Candida glabrata
3.
4. #2 - Aerobic: 1+ Staph coagulase negative
5. Few colonies E. coli
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1	S	S		S	R	S		S	
4			S	S	S		S		S
5	S	S		S	R	S		S	

REPORTED BY: [redacted]

REPORT DATE: 12-19-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

1984-1985

☐ VIRAL PRECAUTION

B259, NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

[redacted]
ANIMAL I.D.

12 / 16 / 19
DATE OF SAMPLE

M SEX | 7 YR 8 MO AGE | 14.4 KG WEIGHT

PROCEDURE IS: ☒ DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Cranial implant discharge - prev. candida growth

HOSPITALIZED ☒ NO ☐ YES ☐

PRIOR THERAPY ☐ NO ☒ YES Prior steroids abx
LIST ALL AGENTS: off for 1 wk

SOURCE OF SPECIMEN(S): #1 red - inside recording port
#2 green Cranial implant - rostral skin

CULTURES REQUESTED	NEGATIVE RESULT: NEGATIVE	NEGATIVE RESULT: NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC #1 & #2	✓	
☒ FUNGI/YEAST	✓ #2	
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. #1 - Aerobic: 3+ E. coli
2. Fungi/yeast: 2+ Candida glabrata
3.
4. #2 - Aerobic: 1+ Staph coagulase negative
5. Few colonies E. coli
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)
1	S	S		S	R	S		S	

REPORTED BY: [redacted]

REPORT DATE: 12-19-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

1967

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

C759 NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

MMU [redacted]
ANIMAL I.D.

12/9/19
DATE OF SAMPLE

SEX ____ AGE ____YR ____MO WEIGHT ____KG

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA

HOSPITALIZED NO ☒ YES ☐

PRIOR THERAPY ☐ NO ☒ YES
LIST ALL AGENTS
Cefazolin

SOURCE OF SPECIMEN(S) d/c cuond port

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☐ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. Few colonies Staph coagulase negative
2. 2+ Candida glabrata
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 12-13-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Post-operative monitoring record

Date: 12/3/19 Animal# [redacted] Procedure: Cranial implant port Repair

			Date	Date	Date	Date	Date	Date	Date
General Obervations			12/4/19	12/5/19	12/6/19	12/7/19	12/8/19	12/9/19	12/10/19
	Appetite		F/P	F	F	G	G	F/Fast	F
	Hydration		G	G	G	G	G	G	G
	Stool		N	N/SS	SS	N	SS	W/SS	N
	Incision		int	int	intact mild scab	int	CDI	CDI	CDI
		Score							
Physiologic parameters									
Pupils									
	Normal	0	0	0	0	0			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	0	0	0	0			
	Tachypnea	2							
Mucous membranes									
	Pink	0	0	0	0	0			
	Pale	2							
Posture									
	Sitting/standing upright	0	0	0	0	0			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0		0	0	0			
	Attention to wound	1	1						
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	0	0	0	0			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score			1	0	0	0			
Initials:			[redacted]						

Revised 7/2017

1951-195

DP

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

☐ VIRAL PRECAUTION

B759, NR403
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

ANIMAL I.D. [redacted]

12, 3, 19
DATE OF SAMPLE

M SEX | 7 YR 8 MO AGE | 14.7 KG WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
presx-2

HOSPITALIZED NO☐ YES☑ [redacted]

PRIOR THERAPY ☐ NO ~~☑ YES~~
LIST ALL AGENTS

SOURCE OF SPECIMEN(S) cranial implant port connector

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☑ AEROBIC		
☐ ANAEROBIC		
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION
*L
(1) ☑ side base of cylinder on lower surface
*R
(2) ☑ side under tip of skin margin
(3) inside port

ORGANISMS IDENTIFIED

1. 12/6 (1) (L) side 2+ staph coagulase Negative
2. 12/6 (2) (R) side 1+ staph coagulase Negative
3. 12/6 (3) Inside port: No growth
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 12/6/19

* EE [redacted] 12-4-19

CLINICAL MICROBIOLOGY

2/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5780

B759 WRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

☐ VIRAL PRECAUTION

MKU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

12 / 3 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 1 YR 9 MO 14.7 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ✗ COLONY MANAGEMENT ____ EXPERIMENTAL ✗

CLINICAL SIGNS / PROBLEMS:

pre-sx 2

HOSPITALIZED ☐ NO ☒ YES [redacted]
ROOM CAGE

PRIOR THERAPY ☐ NO ☒ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anesthetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC ①	26.1	X 10^3/ µl
RBC	5.41	X 10^6/ µl
HEMOGLOBIN	12.6	gm/dl
HEMATOCRIT	38.8	%
MCV	72	fl
MCH	23.4	pg
MCHC	32.6	pg/fl
PLATELETS	3.87	X 10^5/ µl

☐ RETICULOCYTES ____ % ____ X 10^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.2 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 26.1 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	90	23490
LYMPHOCYTES	1	261
MONOCYTES	9	2349
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐
①verified by repeat ECC [redacted] 12/3/19

12/3/19 [redacted]

12/3/19 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 12-3-19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2485

☐ VIRAL PRECAUTION

B759, NPL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL D[redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MNW [redacted]
ANIMAL I.D.

12, 3, 19
DATE OF SAMPLE

M 7 YR 8 MO 14.7 KG
SEX AGE WEIGHT

PROCEDURE IS: ✗ DIAGNOSTIC AID ____ COLONY MANAGEMENT ✓ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-Sx 2

HOSPITALIZED NO☐ YES☒ [redacted]
ROOM CAGE

PRIOR THERAPY NO☐ YES ✗
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ✗ FASTED ☐ ____ HOURS COMMENTS: _____

SAMPLE: SERUM ✓ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ✗ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	149	mM/L	15	*	CPK (S,HP)	15582	U/L	25		pH		
2		POTASSIUM (S,HP)	4.6	mM/L	16		ALK PHOS (S,HP)	100	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	109	mM/L	17		GGT (S,HP)	50	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	30	mM/L	18		LDH (S,HP)	2072	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	93	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	6.0	mg/dl	20		TRIGLYCERIDE (S,HP)	63	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.8	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	8	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	120	mg/dl	24	*	hsCRP	42	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.4	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.6	g/dl										
13	*	ALT (S,HP)	159	U/L										
14	*	AST (S,HP)	231	U/L										

REPORTED BY [redacted] DATE 12/3/19

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

*Verified by Repeat [redacted] 12-3-19

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

5738

☐ VIRAL PRECAUTION

BZ59 / NKL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

mmu [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

HEMATOLOGY

12 / 2 / 19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M SEX | 7 YR 8 MO AGE | 14.7 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre-Sx

HOSPITALIZED ☒ NO ☐ YES [redacted]
ROOM CAGE

PRIOR THERAPY ~~☒~~ NO ☒ YES

dexamethasone, keppra

FACS

☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anesthetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	16.8	X 10 ^3/ µl
RBC	5.96	X 10 ^6/ µl
HEMOGLOBIN	14.0	gm/dl
HEMATOCRIT	42.5	%
MCV	71	fl
MCH	23.5	pg
MCHC	32.9	pg/fl
PLATELETS	3.83	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 8.9 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 500 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 16.8 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	87	14616
LYMPHOCYTES	10	1680
MONOCYTES	3	504
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

12/2/19 [redacted]

12/2/19 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 12/2/19

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

24165

☐ VIRAL PRECAUTION

BZ59 / NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

12/2/19
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 7 YR 8 MO 14.7 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-Sx

HOSPITALIZED NO☒ YES ☐ [redacted]
ROOM CAGE

PRIOR THERAPY NO☐ YES☒
LIST ALL AGENTS:
Dexamethasone & Keppra

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☒ ____ HOURS COMMENTS: _____

SAMPLE: SERUM ☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	151	mM/L	15		CPK (S,HP)	415	U/L	25		pH		
2		POTASSIUM (S,HP)	4.6	mM/L	16		ALK PHOS (S,HP)	93	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	106	mM/L	17		GGT (S,HP)	52	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	29	mM/L	18		LDH (S,HP)	493	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	21		19		CHOLESTEROL (S,HP)	153	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	2.3	mg/dl	20		TRIGLYCERIDE (S,HP)	47	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	11.1	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	21	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.0	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	83	mg/dl	24		hsCRP	2	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	8.2	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.6	g/dl										
13		ALT (S,HP)	22	U/L										
14		AST (S,HP)	18	U/L										

REPORTED BY [redacted] DATE: 12/2/19

PERFORMED BY: CNPRC ☐ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL03	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 12/3/19

PROCEDURE: Cranial Implant Repair	ROOM: [redacted]	AGE: 7y 8m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 3852	WT: 14.75 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane and ketamine, the animal's head was placed into the stereotaxic frame. The percutaneous port was examined and found to be free of its bony anchors. Electrophysiologic cables were attached and the device was interrogated and found to be functional. In consultation with the attending veterinarian, the decision was made to repair the device. The head was sterilely prepped. The posterior portion of the previous midline incision was reopened using scissors to cut the sutures. The broken footplates of the port were removed. The screws anchoring them were removed. The sharp edges of the port were trimmed. A titanium plate was used to anchor the base of the port to the skull. Palacos was used to secure the port to the titanium plate and found to be stable. The main midline incision was closed in an inverted, interrupted fashion using 2-0 and 3-0 vicryl in the fascia. The skin was closed using a 4-0 monocryl running subcuticular stich. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss: approximately 5cc.

	POST OPERATIVE CARE:
TIME IN:	Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days ~~Dexamethasone SID x7 days~~ (1) ~~Cefazolin BID x7 days~~ Omeprazole SID x7 days
TIME OUT:	~~Famotidine SID x3 days~~ Levetiracetam BID x7 days

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Anif[redacted] Data Entry Surgery Requestor Veterinarian

(1) see record for post-op Tx. [redacted] 12/3/19

Post-operative monitoring record

Date: 12/2/19 Animal# MMU [redacted] Procedure: Neuro Sx (Repair (12/3/19)

General Obervations		Date	Date	Date	Date	Date	Date	Date
Appetite		12/3/19						
Hydration		E						
Stool		G						
Incision		D						
	Score	Sys. wkness w/ d/c						
Post-operative Score								
Initials:		DCD						

12/2 overnight

do it now

done

12/2 MMU 42461

9PM: front of cage, intermittently sleeping, drank H_2O (bottle + lixit), food in pouches attempting to sleep

10PM: front of cage drinking ORT, urinating, Bup admin

11PM: sleeping @ front of cage

12AM: intermittently sleeping @ front of cage, mild pruritus, eating from chuck pouch

AM: intermittently sleeping @ front of cage, mild pruritus (head, face)

do it later

done

2AM: mild-mod pruritus (mostly incision + face), intermittently sleeping

3AM: sitting up, intermittently sleeping. Mild pruritus

4AM: mostly sleeping

5AM: mostly sleeping, sitting up + alert when awake

6AM: active, sitting up, eating treats given, defecated and urinated, Serosanguineous d/c emitted from caudal incision @ port, incision C+D.

Completed pstaxed on 12/3

revised 7/2017

California National Primate Research Center: Anesthesia Monitoring Sheet Page 1 of 1

Animal: [redacted] **Home Room:** [redacted] **Date:** 12/3/19 **Age:** 7y 8m **Sex:** (M) / F **Wt. (Kg)** 13.07 kg

Procedure: Repair / Removal port. **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** Reno **Project/ID:** NEW3 / BZ59

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
atropine	1.4	IM	2pm	LRS w/ 2.5% dextrose		IV					
hydromorphone	1.1	IM	2pm	metoclopramide	1.5	IV	2:50				
				cefazolin	1.1	IV	15:05				

Del: 1:50 **Sx Table:** 2:05 **Prep:** 2:50 **Start:** 15:00 **Cut:** 15:12 **Proc:** 1530 - 1610 **Close:** 1620 - 1630 **Recovery** _____

Time	2:17p	2:35p	2:54	3:11	3:32	5:44	16:00	16:18
Temp								
160								
150								
140								
130								
120								
110								
100	✓	▼	✓	✓	✓	✓	✓	✓
90			▼	▼	▼	▼	▼	▼
80						▼	▼	▼
70	▼	▼						
60	—	—	▲	▲	—			
55		▲			▲			
50						—	—	—
45	▲							
40	X		X	X	X	X ▲	▲ X	▲ X
35		X						
30								
25								
20								
15	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
10								
5								
Sigh								
Fluids: LRS (Total/Rate)	50 / 130	65 / 130	127 / 130	161 / 130	203 / 130	237 / 130	265 / 130	305 / 130
CRI: _____ (Total/Rate)								
Iso FI (%) / Oxygen (L)	1 / 2	1.6 / 2	1.5 / 2	1.6 / 2	1.6 / 2	1.6 / 2	1.6 / 2	1.6 / 2

Intubated

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy) *Initial:* [redacted] rev.6/19-PC15A

UCD 0614

23-01594_000651

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL03	ANIMAL SP ID# MMU [redacted]	*DATE OF EVENT* *MO DAY YR* *12/2/19*

PROCEDURE: Cranial Implant	ROOM: [redacted]	AGE: 7y 7m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 3852	WT: 14.75 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, fentanyl and propofol, the animal's head was placed into the stereotaxic frame. The head was sterilely prepped. Midline incision made approximately 6cm in length. Fascia incised and temporalis muscle elevated bilaterally from temporal ridges. Approximately 15 millimeters anterolateral to bregma, two 9mm burr holes were made on each side using a cranial perforator. Exposed dura was excised. Microelectrode implants were placed using investigational robotics. Surgiflo and titanium plate were used to seal burr hole. This process was repeated on the right hemisphere. A single separate stab incision was made 1 cm posterior to the primary incision in the midline and a transcutaneous port was passed through the incision. The main midline incision was closed in an inverted, interrupted fashion using 2-0 and 3-0 vicryl in the fascia. The skin was closed using a 4-0 monocryl running subcuticular stich. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss: approximately 15cc.

	POST OPERATIVE CARE:
TIME IN: 8:57a TIME OUT: 6:45p	Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days Dexamethasone SID x7 days Cefazolin BID x7 days Omeprazole SID x7 days Famotidine SID x3 days Levetiracetam BID x7 days

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 1 of 2*

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 12/2/19 **Age:** 7y 8m **Sex:** (M) / F **Wt. (Kg)** 14.75

Procedure: Neuro Sx **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** 3852 **Project/ID:** NRL03/RZ59

HR – ●, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
Atropine	1.4	IM	8:15	Cefazolin	1.0ml	IV	9039	Cefazolin	1.0mls	IV	1310
Ultrasine	0.75	IV	8:15	Dopamine CRI Started	CRI 140ml/hr	IV	9419	Atropine	1.4mls	IM	1424
Ultrasine	0.2	IM	8:15	Dopamine CRI ↓ to 70ml/hr		IV	1015a				
				Cefazolin	1.0 mls	IV	1115a				

Del: 8:10 **Sx Table:** 8:20 **Prep:** 835a **Start:** 850a **Cut:** 857a **Proc:** 859a - **Close:** - **Recovery** 6:45p

Time	8:35	8:57	9:16	9:30	9:45a	10:00a	10:15	10:30a	10:45	11:00a	11:15a	11:30a	11:45a	12:00	12:15	12:30	12:45	1:00	1:15	1:30	1:45	1:407	1:421	1:435
Temp	98.5	97.6	97.0	97.2	97.3	97.9	98.0	98.4	98.3	98.3	98.2	98.1	98.3	98.3	98.8	98.0	98.3	98.0	97.7	97.5	97.3	96.9	97.1	97.4
160																								
150																								
140				BP cuff off	BP cuff off																			
130																								
120																								
110																								
100																								
90																								
80																								
70																								
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25																								
20																								
15																								
10																								
5																								
Sigh																								
Fluids: LRS (Total/Rate)	0 / 140	67 / 140	103 / 140	142 / 140	173 / 140	228 / 140	247 / 70	270 / 70	284 / 70	304 / 70	318 / 70	337 / 70	355 / 70	370 / 70	352 / 60	372 / 40	400 / 40	415 / 70	446 / 40	432 / 40	446 / 40	461 / 40	471 / 40	480 / 40
CRI: Dopamine (Total/Rate)	0 / 14	6.7 / 14	10.4 / 14	14.2 / 14	17.2 / 13	22.3 / 13	24.4 / 13	28.6 / 13	31.2 / 13	35.3 / 13	31.5 / 13	41.0 / 13	43 / 13	41.2 / 13	49.4 / 13	53.5 / 13	57.3 / 13	60.1 / 13	63.7 / 13	67.1 / 13	70.3 / 13	74.8 / 13	77.9 / 13	80.7 / 13
Iso FI (%) / Oxygen (L)	2.1 / 2	1.7 / 2	1.7 / 2	1.4 / 2	1.4 / 2	1.2 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy) *Initials* [redacted] rev.6/19-PC15A

Recording error [redacted] 12/2/19

UCD 0616

23-01594_000653

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 2 of 2*

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 12/2/19 **Age:** 7y8m **Sex:** (M)/ F **Wt. (Kg)** 14.75

Procedure: Neuro Sx **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** 3852 **Project/ID:** NRL03/B259

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
				Dopamine 0.4ml (1:40)	0.4ml/CKI	IV	1519				
				cefazolin	1.0cc	IV	1510				
				LRS only		IV	1718				
				hydro			1750				

Del: OR **Sx Table:** — **Prep:** — **Start:** — **Cut:** — **Proc:** — - 17:00 **Close:** 17:00 - 17:35 **Recovery** 6:45p

Time	1445	1500	1515	1530	1545	1600	1615	1630	1650	1700	1717	1732
Temp	97.5	98.0	98.4	98.4	98.0	97.8	98.3	98.0	98.8	98.4	98.5	98.8
160												
150												
140												
130												
120									▼	▼		
110	▼	▼	▼	▼	▼	▼		▼		▼	▼	
100	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	▼
90	•	•	•	•	•	•	•	•	•	•	•	
80												
70	—	—	—	—	—	—	—	—	—	—	—	—
60												
55												
50												
45	▲	▲										
40			▲	X	▲X	▲X	▲Y	▲X	X	X	X▲	X
35	X	X	X	▲					▲			▲
30										▲		
25												
20	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
15												
10												
5												
Sigh												
Fluids: LRS (Total/Rate)	487 / 40	490 / 40	507 / 40	517 / 40	525 / 40	536 / 40	546 / 40	556 / 40	573 / 40	580 / 40	592 / 40	623 / 40
CRI: Dopamine (Total/Rate)	83 / 13	86 / 13	89 / 13	92.5 / 13	96.4 / 13	98.9 / 13	102 / 13	105 / 13	111 / 13	113.1 / 13	116 / 13	—
Iso FI (%) / Oxygen (L)	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.1 / 2	1.3 / 2

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) *Anesthesia (Copy)*

* Head/ neck
rostral + caudal fur broke off of XMal connector base
Dr. [redacted] says edges smooth not sharp)

Initia [redacted]

rev.6/19-PC15A

UCD 0617

23-01594_000654

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/13/18					0.9cc Ketamine → Surgery prep / Radiology	[redacted]
/					Bled 15mls - Per Vet Request	

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

ter

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 14

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
9/13/18		P	F	N	SO: animal slightly pale this am; yellow	
					tint from implant. Vomit noted in cg. moves	
					when stimulated.	[redacted]
9/13/18					SO2: MH & SRA reported animal having	
					gasping episode 2-3 time	
					after monitoring for ~ 15 min obs	
					of resp. episode animal stretched	
					& hunched posture then open	
					mouth gasping / retching almost	
					& then deep breaths as she	
					appeared to collapse from exhaustion/	
					fatigue. Upon reviewing the	
					video monitoring tape noted	
					animal has had mult episodes	
					since 1640 this am & the	
					episodes are happening more	
					closely together. In between	
					episodes animal is quiet, not	
					eating or drinking. Can stand when	
					encouraged though the (R) leg	
					is weak & unable to support	
					much wt. Legs cont to be st.	
					dilated & track appropriately.	
					Can manipulate animal fairly	
					well w/o cues. A: Declining	
					cond. w/ respiratory component	
					P: NX - Sedated for blood Xrays,	
					heart auscultated tachycardic rate	
					& w/a strong Grade 4 murmur. Unable to	
					hear lungs	

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000656

UCD 0619

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9.12.18					A: Cranial probably mostly intact, ataxia, paresis of both leg, hypermetric w/ arm → Moderate to severe neurologic deficit (arm/leg/brain - depression)	
					P: Monitor during the day, reevaluate in the afternoon, if no improvement assess for med call @ 3:00 PM	
					Buprenex BID, adenositron BID, Dexamethasone (0.75mg) QID, celazolin BID, Kappra BID	[redacted]
					If decide to continue with her will need supportive cares (OGT, fluids)	[redacted]
					Reevaluate animal in afternoon, animal is more alert, but still lie down when left alone, take some fluxes, neurologic deficit not improved. Talk to PI, agree after the P.I communicated w/ surgeon that the best option is to collect blood, euthanized + perform complete Dx	[redacted]
					Talk with P.I, want to keep the animal for another 24 hrs + reassess @ this time, let the P.I know about long-term problem associated w/ paresis, and the risk of the animal not waking up from sedation + chances of losing the brain. Caution with P.I that if want to continue animal will need to be sedated on 9.13.18 for OGT/fluids/MRI/blood samples (do sedation under propofol if	

MMU [redacted] F
7yrs 5mos 7.22kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .22 mg Total Dose

0.70 mLs Volume — IM Rte — BID Freq — 5 Days
Start 09-10-2018 End 09-14-2018

Modified Extended Ended
Ended, Extended, Modified, Dose Ovrd

MJL C-110319-DO Upd12SEP317:53 Prn12SEP317:53

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 11

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/12/18					12am Animal is sitting up. Vomited a few times. Admin another dose of dexamethasone & a PRN dose of ondansetron. Also elected to stop hydromorphone & switch to buprenex so animal is not so heavily sedated	
					MMU [redacted] F 7yrs 5mos 7.24kg NRL02 Hydromorphone 10 mg/mL 0.15 mg/kg Dose — 1.1 mg Total Dose 0.11 mLs Volume — IM Rte — TID Freq — 3 Days MMU [redacted] F 7yrs 5mos 7.22kg NRL02 Buprenorphine .3 mg/mL 0.03 mg/kg Dose — .22 mg Total Dose MMU [redacted] F 7yrs 5mos 7.22kg NRL02 Ondansetron 2 mg/mL 0.15 mg/kg Dose — 1.1 mg Total Dose 0.50 mLs Volume — SC Rte — BID Freq — 3 Days	[redacted]
					MMU 46135 [illegible] F 7yrs 5mos 7.22kg NRL02 Buprenorphine .3 mg/mL 0.03 mg/kg Dose — .22 mg Total Dose KLC [illegible] mLs — IM Rte — BID Freq — 1 Days	
9/12/18		P	G	SS Gut	SS. animal holding herself up at front of cg, otherwise huncched in cg. RE/LE appears normal, pupils dilated. Very little interaction w/ environment/observers. Will briefly look up, then closes eyes. Notified DVM.	[redacted]
					Evaluate animal in cage; back leg paresis, loss of proprioception, still some mild ataxia ++, ataxia, mild but hypermetric - use them mainly to move, pupillary reflex = appears normal (dilated eye in dark + constrict in light), unable to do condensical reflex, can move her tongue, difficult but can swallow, move lip but weak (pain from masseter or neurologic?), no facial paralysis or eyelid of face drooping ⇒ cranial nerve appears normal. Eat some grape, if open and put directly in her mouth. [illegible] lying down when not stimulated	

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/11/18					eventually just layed down	
					Pupils still responding to light but	
					not as reactive as normal or previously	
					A: Decline, postop cond probably	
					from cerebral edema + trauma.	
					P: Elected euthanasia	
					~~Sedated animal w/ 0.4 mls ket~~	
					~~+ 0.3 mls dex // atp. to deliver~~	
					~~to path~~ ①	[redacted]
9/11/18					20g 8 pm animal recovering from	
					sedation before transport. Pupillary	
					light response improved & tracking	
					so no brain stem compression.	
					Consultation w/ Neurosurgeon - ↑ dose	
					of keppra to 80 mg/kg should	
					prevent seizures, consider another	
					IV mannitol dose 9/12 am, cont	
					other meds. If cond worsens s/c	
					necropsy asap, if cond doesn't	
					improve s/c necropsy @ 3 pm	
					9/12. Otherwise tx & support PRN	
					collect CBC, chem 20, coag panel	
					if possible 9/12 am	[redacted]

MMU [redacted] F
7yrs 5mos 7.40kg NRL02

Levetiracetam 100 mg/mL
14.00 mg/kg Dose — 104 mg Total Dose

1.00 mLs Volume — PO Rte — BID Freq — 3 Days
Start 09-09-2018 End 09-11-2018
KLC C-110178-DO Upd11SEP923:32 Prn11SEP923:32

MMU [redacted] F
7yrs 5mos 7.22kg NRL02

Levetiracetam 100 mg/mL
30.00 mg/kg Dose — 217 mg Total Dose

2.20 mLs Volume — PO Rte — BID Freq — 5 Days
Start 09-12-2018 End 09-16-2018
Dose Over
KLC C-110386-DO Ins11SEP923:30 Prn11SEP923:30

MMU [redacted] F
7yrs 5mos 7.22kg NRL02

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 5.4 mg Total Dose

0.50 mLs Volume — IM Rte — QID Freq — 3 Days
End 09-13-2018
KLC C-110375-DO Upd11SEP923:28 Prn11SEP923:28

① Write right to euthanize if not cancelled RE [redacted] 9/11/18

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000659

UCD 0622

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
9/11/18					80.1 though there was some strong improvement	
					after dex/methasone tx (eyes less	
					dilated, & stronger). Noted periorbital	
					edema so gave 4 mg/kg lasix IM	
					Interval started to lay down	
					more. Elected to sedate for CT	
					scan 0.4 mls Ket IM, 0.3 mls dex/atrop.	
					transported to VMTH for scan	
					No evidence of a hematoma/clot	
					but unable to discern cerebral	
					edema w/o contrast w/ project	
					didn't want to do. Shortly	
					after animal recovered from anes	
					Animal settled - admin 0.8 ml	
					valium IV. Per project MD	
					elected to give 0.25 g/kg	
					mannitol IV bolus w/ 100 mls	
					of LRS IV. Also gave pm tx (dex/methasone)	
					P-180, RR-60, T-100.4	
					Slow recovery. Noted appearance	
					of petechiae (excessive) HR strong	
					(RH 1s), lungs clear, ↓ BP noted	
					w/ ↓ size of veins. Obtained	
					0.3 mls blood for rev NOVA:	
					Na+ 150, OsmO 299, K+ 2.48, pH 7.35	
					Elected to add 100 mls LRS SQ	
					w/ 4 mEq KCl. Animal initially	
					kept trying to sit up but	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/11/18					Noted a few scratches possibly from scratching "drowsiness" ① confirmed in addition to weakness esp in hindlimb due to fatigue & suspect neurosigns. Animal is actively drinking & still has food in her cheek pouches. Administered 1st dose of Cerenia SQ Ondansetron SQ & benadryl IM Chem 70 (9/10) K+ 3.3 P2: ↑ neurosigns continues - started tx Sun recover after prolonged ches/sx yesterday & ches this am along w/ neuroelectrodes & implants P2: See previous page + new tx's Monitor closely [redacted]	[redacted]
MMU [redacted] 7yrs 5mos 7.22kg NRL02 F						
Maropitant 10 mg/mL; 1.00 mg/kg Dose; 7.2 mg Total Dose						
0.70 mLs Volume; SC Rte; SID Freq; 2 Days; Start 09-11-2018; End 09-12-2018; KC gave dose at 12 pm						
KLC C-110365 Ins11SEP13:05 Prn11SEP13:05						
MMU [redacted] 7yrs 5mos 7.22kg NRL02 F						
Ondansetron 2 mg/mL; 0.15 mg/kg Dose; 1.1 mg Total Dose						
0.50 mLs Volume; SC Rte; SID Freq; 3 Days; Start 09-11-2018; End 09-13-2018; KC gave first dose at 12pm						
MMU [redacted] 7yrs 5mos 7.22kg NRL02 F						
Diphenhydramine 50 mg/mL; 3.00 mg/kg Dose; 22 mg Total Dose						
0.40 mLs Volume; IM Rte; BID Freq; 2 Days; End 09-12-2018						
KLC C-110367 Ins11SEP13:06 Prn11SEP13:06						
9/11/18					2pm SO3: QAR Animal just had hydromorphone tx but was noted for laying on perch & shivering. Moved heat lamp closer and animal stopped shivering. Noted pupils more dilated & leg seem weaker. Concern w/ possible/probable brain edema so decided on dexamethasone tx (1 mg) P2: See P1 & P2 today SO3.5 collect 5mls blood for NOA & labs	[redacted]
MMU [redacted] 7yrs 5mos 7.22kg NRL02 F						
Dexamethasone 10 mg/mL; 0.75 mg/kg Dose; 5.4 mg Total Dose						
0.50 mLs Volume; IM Rte; SID Freq; 2 Days; Start 09-11-2018; End 09-12-2018; KC gave first dose at 2 pm						
KLC C-110375 Ins11SEP14:30 Prn11SEP14:30						

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
7/11/18		P/F	G	N	SO: QAR Animal is standing, pupils are fairly wide, animal is still weak and mildly/mod uncoordinated	
					Noted 3 spots of urine below cage.	
					(w/ food) check pouches have some food Animal drank most	
					of her ORS. Gave oral dose of Keppra	
					& omeprazole when sedated w/	
					0.3 mls dex/atip & hand caught	
					to lower implant discs so they	
					cannot catch on the cage.	
					A: Good recovery post lengthy	
					neurosurgery w/ electrodes	
					& implants (recovery 6pm 7/10)	
					Some appetite & drinking	
					Still weak & uncoordinated	
					- as could be expected P: CTM	
					closely especially for neuro	
					signs. Offer supps & ORS to	
					encourage intake ✓ incision	
					daily, Ketanalgesia (7/12) & Cefazolin (7/16)	
					(Dexamethasone if needed	
					for possible brain edema) Keppra (7/16)	
					Omeprazole (7/16) Famotidine (7/12)	[redacted]
7/11/18			12pm		SO: QAR Animal reported "drowsy" &	
					vomited a few times conf. Cleaned	
					cage & animal vomited again	
					while preparing antiemetic Tx	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
8/31/18					SO: Transported to [redacted] for MRI, project NRL02 WO# 2722. Sedated with ketamine 0.8 mls, Animal was / was not placed in Steriotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal did/did not receive Ketoprofen IM 0.37mls IM.	[redacted]
9/7/18	7.24					[redacted]

9/10/18 MMU [redacted] 0.8 MLS KET IM ~> SURGERY PREP W/O 2779 NRL02

WT: 7.22

MMU [redacted] F
7yrs 5mos 7.24kg NRL02

Hydromorphone 10 mg/mL
0.15 mg/kg Dose — 1.1 mg Total Dose
0.11 mLs Volume — IM Rte, TID Freq, 3 Days
Start 09-10-2018 End 09-12-2018

Dose — mls ck w/ vet 1st
0.50 mLs Volume — IM Rte, BID Freq, 7 Days
Start 09-10-2018 End 09-16-2018

0.70 mLs Volume — IM Rte, SID Freq, 2 Days
Start 09-09-2018 End 09-10-2018

1.00 mLs Volume — PO Rte, BID Freq, 8 Days
Start 09-09-2018 End 09-16-2018

0.25 caps Volume — PO Rte, SID Freq, 7 Days
Start 09-10-2018 End 09-16-2018

0.36 mLs Volume — IM Rte, SID Freq, 3 Days
Start 09-10-2018 End 09-12-2018

SO: Rec'd in [redacted] prep wo# 2779, project NRL02
Surgically prepped, performed Cranial Implant
See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert.
A: Cranial Implant
P: POM X 7 days, Start RX

✓Charges ✓Admit ✓RX ✓Supps ✓Move Sheet
✓Surgery Log ✓Anesthesia Log ✓Surgery Report

MMU [redacted] F
7yrs 5mos 7.22kg NRL02

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte, SID Freq, 7 Days
Start 09-11-2018 End 09-17-2018

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte, SID Freq, 3 Days
Start 09-11-2018 End 09-13-2018

MMU [redacted] F
7yrs 5mos 7.22kg NRL02

Water
1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte, SID Freq, 7 Days
Start 09-10-2018 End 09-16-2018

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .22 mg Total Dose
0.70 mLs Volume — IM Rte, SID Freq, 3 Days
Start 09-10-2018 End 09-12-2018

9/11/18					3:15am P vomited elected to give 0.74mls metoclopramide IM.	[redacted]
					4:35a P vomited elected not to give any additional drugs at this time	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 5

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
7/25/18	7.51				Loaded animal in transport truck w/O# 2244	[redacted]
					SO: Transported to [redacted] for MRI, project NRLO2 WO# 2244. Sedated with ketamine 0.9 mls, (Animal was) / was not placed in Steriotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal (did)/did not receive Ketoprofen IM	
7.25.18					RETURNED TO HOME CAGE	[redacted]
7/27/18	7.40					
8/10/18	7.20					
8/10/18					Cardiologist-guided echocardiogram performed due to: pre-shipment / (pre-project) / clinical Preliminary Results: (Normal) / LVH / Suspect (await final results) Comments: Final Echo Result: **LVH Negative**	
8/10/18	MMU [redacted] / 1.0 MLS KET IM, D→ 1302				SPF01 W.O. 2437	[redacted]
WT: 7.27	CAGE TIME 2:30 15MIN 2 30MIN 3 45MIN ___ 1HR ___ 1.25HR ___ 1.5HR ___ 1.75HR ___ 2HR ___					
8/24/18	7.40					
(1) 8/23/18					Animal #: [redacted] Room#: [redacted]	
		P	G	CC	SO: BAX, paired Re: poor app; left chow and forage A: poor app, 1st recent report P: CTM on routine MH	[redacted]
8/31/18	MMU [redacted] / BOX LOAD INTO TRANSPORT TRUCK				W/O 272	
WT:						[redacted]

(1) Late Entry [redacted] 8.28.18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 11

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/14/18					Moved → [redacted] per MO # 18-100	[redacted]
3/9/18	7.16					
3/23/18	8.22					
4/6/18	MMU [redacted] 1.1 ML KET IM, BLED SB, ROOM ROUND UP TB TEST L EYE 24HR / 48HR / 72HR / WT: CAGE TIME: 8:45 15MIN 1 30MIN 2 45MIN 3 1HR___ 75MIN___ 1.5HR___ 1.75MIN___ 2HR___					[redacted]
① ~~4/10/18~~ 4/7/18		P	G	N	SO: BAR (P) Re: Poor appetite. Ate 0 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	
4/20/18	8.14					[redacted]
5/4/18	8.04					
5/18/18	8.08					
					Animal #: [redacted] Room#: [redacted]	
6/2/18		G	G	CC	SO: BAR (F) Re: Blood undetermined. No noted trauma to face, digits or body. A: Unable to determine source of blood, NEPD. P: CTM on MH	[redacted]
6/14/18		?	G	N	SO: BAR (P), Re: Poor App (8 chow) No chow in cage, playing w/toys active. Receives training treats per project. NEPD. A: unconfirmed poor App P: CTM on MH	[redacted]
7/13/18	7.40					[redacted]

① E.E. entered incorrect date. 4/7/18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
9-28-17	7.16				[redacted] [redacted] 9/28/2017 0.7 mls Ket. BCS= 2 Tartar (0) 1 2 3 4 Teeth Scaled Y (N) TB Test (R) L Eye 24hr — 48hr — 72hr —	
					ANIMAL MONITORED UNTIL RECOVERED	[redacted]
					Moved → [redacted] Move # 17-613	
11/12/17		G	G	CL	S: BAR (P) R: vomiting. A: Clean cage, unable to confirm vomiting. P: CTM in MH.	[redacted]
10-16-17					moved → [redacted] per move # 17-669.	[redacted]
10/31/17	7.13				B.W	[redacted]
1.4.18	7.13				Box wt	[redacted]
2/12/16					Head Circumference = 27cm	[redacted]
2/12/18	MMU [redacted] 0.7 MLS KET IM, BLED 3 MLS, D→1302 NRL02 W/O 4719					
	WT: 7.00 CAGE TIME: 9:00 15MIN 2 30MIN 3 45MIN ___ 60MIN ___ 75MIN ___ 90MIN ___					[redacted]
2/12/18					X pre-project physical __pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	

In-house Cardiac Evaluation

Auscultation: _____

Thoracic Rads: _____

Echo: No evidence of LVH

RVIDd _____ IVSs _____
IVSd _____ LVIDs _____
LVIDd _____ LVPWs _____
LVPWd _____ EDV _____
EF _____ ESV _____

ECG Interp: _____
P wave: height _____ duration _____
QRS complex: height _____ duration _____
PR Interval: _____
ST Segment: _____
T wave: _____
QT Interval: _____

[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

4543

☐ VIRAL PRECAUTION

B259, NRU02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

9, 13, 18
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

F
SEX

____YR ____MO
AGE

____KG
WEIGHT

PROCEDURE IS: DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Post · SX

HOSPITALIZED ☐NO ☐YES ____-____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	10.1	X 10 ^3/ µl
RBC	5.62	X 10 ^6/ µl
HEMOGLOBIN	13.8	gm/dl
HEMATOCRIT	42.8	%
MCV	76	fl
MCH	24.5	pg
MCHC	32.2	pg/fl
PLATELETS	3.06	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.9 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 600 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 10.1 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	77	7777
LYMPHOCYTES	18	1818
MONOCYTES	5	505
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/13/18 [redacted]

9/13/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9-13-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink – Requestor

1944

☐ VIRAL PRECAUTION

R259, NBLD2
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

MMU [redacted]
ANIMAL I.D.

9 / 13 / 18
DATE OF SAMPLE

F ____ YR ____ MO ____ KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Post Sx

HOSPITALIZED NO☐ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (SHP)	148	mM/L	15		CPK (S,HP)	2505	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	161	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	101	mM/L	17		GGT (S,HP)	49	U/L	27		POTASSIUM		mmol/L
4	①	TCO_2 (S,HP)	41	mM/L	18	②	LDH (S,HP)	2404	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	9		19		CHOLESTEROL (S,HP)	156	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.9	mg/dl	20		TRIGLYCERIDE (S,HP)	88	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (SHP)	9.8	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	40	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	145	mg/dl	24	①	hsCRP	32	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.8	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.0	g/dl										
13	①	ALT (S,HP)	471	U/L										
14	①	AST (S,HP)	345	U/L										

① verified by repeat analysis. [redacted] 9-13-18
② Result obtained by dilution. [redacted] 9-13-18

REPORTED BY [redacted] DATE: 9-13-18

PERFORMED BY: CNPRC ☒ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1944

☐ VIRAL PRECAUTION

B259, NRLW2
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

MISCELLANEOUS

9/13/18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F ____ YR ____ MO ____ KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: ____ COLONY MANAGEMENT: ____ EXPERIMENTAL: ____

CLINICAL SIGNS / PROBLEMS:
Post Sx

HOSPITALIZED NO☐ YES☐ ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anesthetized ☐ Other ____

PROCEDURE(S) REQUESTED: Coagulation + PTT + Fibrinogen + ~~D-Dimer~~ ①

SPECIMEN:

RESULTS

PT 12.3 secs

APTT 19.0 secs

Fibrinogen 540 mg/dl

VIA VMTH [redacted] 9-13-18

① unable to perform test. only validated for canines per [redacted]/VMTH. [redacted] 9-13-18

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

4506

DEAD

B759, NRL02
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

9 / 10 / 18
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

F SEX | 7 YR 5 MO AGE | 7.4 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

preop

HOSPITALIZED ☐ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☒ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	9.9	X 10 ^3/ µl
RBC	5.74	X 10 ^6/ µl
HEMOGLOBIN	14.0	gm/dl
HEMATOCRIT	43.2	%
MCV	75	fl
MCH	24.5	pg
MCHC	32.5	pg/fl
PLATELETS	2.87	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 8.1 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 9.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	50	4950
LYMPHOCYTES	45	4455
MONOCYTES	3	297
EOSINOPHILS	2	198
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/10/18 [redacted]

9/10/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9/11/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC11 (3/14)

1777

4543

DEAD

B259, NRL02
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

PROCEDURE IS: DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL ____

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

9 / 13 / 18
DATE OF SAMPLE

F
SEX

____ YR ____ MO
AGE

____ KG
WEIGHT

CLINICAL SIGNS / PROBLEMS:

Post · Sx

HOSPITALIZED ☐ NO ☐ YES ____ - ____
ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	10.1	X 10 ^3/ µl
RBC	5.62	X 10 ^6/ µl
HEMOGLOBIN	13.8	gm/dl
HEMATOCRIT	42.8	%
MCV	76	fl
MCH	24.5	pg
MCHC	32.2	pg/fl
PLATELETS	3.06	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.9 gm/dl

PLASMA COLOR:
X NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 600 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 10.1 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	77	7777
LYMPHOCYTES	18	1818
MONOCYTES	5	505
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/13/18 [redacted]

9/13/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9-13-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

23-01594_000671

UCD 0634

4500

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

B7591, NHL02
I.D. PROJECT CODE

[redacted]

[redacted]

ANIMAL DATA [redacted]
ROOM CAGE

NHL [redacted]
ANIMAL I.D.

9, 10, 18
DATE OF SAMPLE

F SEX | 7 YR 5 MO AGE | 7.4 KG WEIGHT

EXPERIMENTAL X

COLONY MANAGEMENT

PROCEDURE IS: DIAGNOSTIC AID

PRIOR THERAPY ☒ NO ☐ YES

CLINICAL SIGNS / PROBLEMS:

preop

HOSPITALIZED ☐ NO ☐ YES ROOM CAGE

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted ____ hrs ☒ Anethetized ☐ other

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ SMEAR EVALUATION: TOTAL WBC 9.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

☐ ELECTRONIC CELL COUNT

WBC	9.9	X 10 ^3/ µl
RBC	5.74	X 10 ^6/ µl
HEMOGLOBIN	14.0	gm/dl
HEMATOCRIT	43.2	%
MCV	75	fl
MCH	24.5	pg
MCHC	32.5	pg/fl
PLATELETS	2.87	X 10 ^5/ µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	50	4950
LYMPHOCYTES	45	4455
MONOCYTES	3	297
EOSINOPHILS	2	198
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

☐ RETICULOCYTES % X 10 ^5/ µl

☐ PCV (CENTRIFUGED) %

☐ PLASMA PROTEIN 8.1 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 200 mg/dl

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/10/18

[redacted]

9/10/18

[redacted]

REPORT DATE: 9/11/8

REPORTED BY: [redacted]

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

9C13 (3/14)

1927

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

I.D. _____ / PROJECT CODE _____

[redacted]

INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]

ROOM CAGE

ANIMAL I.D. [redacted]

_____ / _____ / _____

DATE OF SAMPLE

F 7 YR 5 MO 7.1 KG

SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED NO☐ YES ☐ _____ - _____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☐ X ____ HOURS COMMENTS: _____

SAMPLE: SERUM ☐ X HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☐ X HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☐ X SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA

#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	148	mM/L	15		CPK (S,HP)	399	U/L
2		POTASSIUM (S,HP)	3.3	mM/L	16		ALK PHOS (S,HP)	177	U/L
3		CHLORIDE (S,HP)	108	mM/L	17		GGT (S,HP)	61	U/L
4		TCO_2 (S,HP)	27	mM/L	18		LDH (S,HP)	430	U/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	141	mg/dl
6		PHOSPHOROUS (S)	2.5	mg/dl	20		TRIGLYCERIDE (S,HP)	55	mg/dl
7		CALCIUM (S,HP)	10.3	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl
8		BUN (S,HP)	18	mg/dl	22		DIRECT	0.0	mg/dl
9		CREATININE (S,HP)	0.6	mg/dl	23		INDIRECT		mg/dl
10		GLUCOSE (S,P,HP)	84	mg/dl	24		hsCRP	0	mg/l
11		TOTAL PROTEIN (S)	7.3	g/dl					
12		ALBUMIN (S)	4.7	g/dl					
13		ALT (S,HP)	48	U/L					
14		AST (S,HP)	30	U/L					

URINE

#	✓	TEST	RESULTS	UNITS
25		pH		
26		SODIUM		mmol/L
27		POTASSIUM		mmol/L
28		CHLORIDE		mmol/L
29		PHOSPHOROUS		mg/dl
30		CALCIUM		mg/dl
31		MAGNESIUM		mg/dl
32		CREATININE		mg/dl
33		MICRO PROTEIN		mg/d
34		P/C RATIO		mg/d
35		OSMOLALITY		mOsm

REPORTED BY [redacted] DATE: 9-1

PERFORMED BY: CNPRC ☐ ✓ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

1/2014

Post operative monitoring record

Date: 9/10 Animal# [redacted] Procedure: Neurosurgery w/ implants

			Date	Date	Date	Date	Date	Date	Date
General Obervations			9/11	9/12/18	9/13/18				
	Appetite			D	D				
	Hydration		G	G	F/G				
	Stool		A	Scant	Scant				
	Incision		CDI	NDI	CDI				
		Score							
Physiologic parameters									
Pupils									
	Normal	0	0						
	Dilated	2		2	2				
Respiratory Rate									
	Eupenic	0	0	0					
	Tachypnea (1)	2			2				
Mucous membranes									
	Pink	0	0	0					
	Pale	2			2				
Posture									
	Sitting/standing upright	0	0						
	Hunched posture	1		1					
	Head between knees	2							
	Sitting, legs extended	2			2				
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0							
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2		2	2				
	Shivering/teeth grinding	3			3				
	Immobile	3							
	Ataxia, uncoordinated movement	3	2						
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	0	0	0				
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score			2	5	13				
Initials:			[redacted]						

(1) Open mouth breathing (R)

revised 7/2017

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 1 of 2*

Animal: Mull [redacted] **Home Room:** [redacted] **Date:** 7/10/18 **Age:** 1 yr 5 m **Sex:** M / F **Wt. (Kg)** 7.4

Procedure: Neurosx **ET Tube Size:** 5.5 **Investigator:** [redacted] **W/O#:** 2779 **Project/ID:** NRL02

HR – ●, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – ., Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
atropine	1.0 ml	IM	8:15	Cefazolin	0.5 ml	IV	9:15
ketamine	0.4 ml	IM	8:15				
valium	0.8 ml	IV	8:20				

11:15 1:19 3:24

Del: 8:20 Sx Table: 8:40 Prep: 8:55 Start: 9:10 Cut: 9:29 Proc: 10:30 - 2:46 Close: 9:49 - 3:24 Full Recovery: 10:25 AM

Isoflurane turn OFF 2:15

Time	9:00	9:10	9:17	9:25	9:35	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	1:00	1:15	1:30	1:45	2:00	2:15	2:30	2:45	3:00	3:15
Temp	94.7	94.8	94.6	94.6	94.7	94.6	94.6	94.3	94.9	94.9	95.7	97.0	98.2	99.6	100.1	100.1	100.0	99.9	99.8	99.6	99.3	98.9	98.6	98.3	97.9	97.7	97.5	97.3
150	116																											
140																												
130																												
120																												
110																												
100																												
90																												
80																												
70																												
60																												
55																												
50																												
45																												
40																												
35																												
30																												
25																												
20																												
15																												
10																												
~~Sigh~~	Hypo	8/30	9/30	9/30	23/30	27/30	33/30	33/30	5/30	55/30	69/30	73/30	80/30	83/30	95/30	103/30	109/30	119/30	124/30	132/30	135/30	147/30	153/30	161/30	169/30	172/30	164/30	170/30
Fluids: LRS Total/Rate	22/72	37/72	44/72	51/72	62/72	73/72	91/72	110/72	128/72	144/72	165/72	181/72	196/72	216/72	235/72	254/72	271/72	293/72	306/72	323/72	340/72	361/72	376/72	395/72	414/72	432/72	452/72	467/72
CRI: (R,K,Mid) Total/Rate	3.1/7.4	3.9/7.4	4.6/7.4	5.4/7.4	6.5/7.4	7.6/7.4	9.4/7.4	11.3/7.4	13.2/7.4	14.9/7.4	16.9/7.4	18.7/7.4	20.4/7.4	22.3/7.4	24.4/7.4	26.3/7.4	28/7.4	30/7.4	31.6/7.4	33.3/7.4	35.1/7.4	37.2/7.4	38.7/7.4	40.6/7.4	42/7.4	44.1/7.4	46.5/7.4	48.1/7.4
~~Iso FI (%)~~ O² (L)	1.0/1.5	1.0/1.5	.9/1.5	.9/1.5	0.9/1.5	0.9/1.5	0.9/1.5	0.8/1.5	0.9/1.5	0.6/1.5	0.4/1.5	0.45/1.5	0.45/1.5	0.45/1.5	0.45/1.5	0.44/1.5	0.44/1.5	0.45/1.5	0.45/1.5	0.44/1.5	0.45/1.5	0.45/1.5	0.44/1.5	0.44/1.5	0.44/1.5	0.44/1.5	Ø/1.5	Ø/1.5

(1) "ISO" [redacted] 9/10/18
(2) "Propofol" [redacted] 9/10/18
(3) RE, Shaved Leg [redacted] 9/10/18

propofol

Retamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Animal Chart (Original) Anesthesia (Copy) ***Initials*** [redacted] rev.7/15-PC15A

UCD 0638

23-01594_000675

California National Primate Research Center: *Anesthesia Monitoring Sheet* *Page 2 of 2*

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 9/10/18 **Age:** 7y5m **Sex:** M/(F) **Wt. (Kg)** 7.4

Procedure: cranial implant + stim. recordings **ET Tube Size:** 5.5 **Investigator:** [redacted] **W/O#:** 2779 **Project/ID:** NRL02

HR – •, RR – 0, ETC02 – X, SP02 – √, Sigh – S, VENT – Ø, MAP – –, Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/Amount:	Route:	Time:	Intra-Op:	Dose/Amount:	Route:	Time:
See previous page				Levetiracetam 100mg	2 mL	IV	4:54
				hydromorphone	0.11 mL	IM	1648

Del: _____ Sx Table: _____ Prep: _____ Start: _____ Cut: _____ Proc: _____ - _____ Close: _____ - _____ Full Recovery: 6:25pm

*Electrical stim recordings 3:37

Time	3:30	3:37	3:45	4:00	4:15	4:30	4:45	5:00	R	5:30	5:50
Temp	97.1	97.0	97.0	96.5	96.0	96.0	96.2	96.2	e	97.1	98.4
150									c	▼	
140									o		
130									v		▼
120									e	–	
110								▲	r		
100	▼ √	▼ √	▼ √	▼ √	▼ √	▼ √	√ ▼	√	y	√ ▲	– √
90	•	•	•	•	√	•	•	•		•	•
80					√	•	–				▲
70					–	–	▲				
60	–	–	–	–							
55											
50											
45								▲			
40						▲				X	X
35	X	X	X	X	▲ X	X	X	X			
30	▲	▲	▲	▲							
25											
20											
15	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø		Ø	Ø
10											
Propofol Sigh	@ 155 Pro 20	178 20	201 20	224 20	247 20	272 20	296 20	Propofol turned off @ 4:51pm			
Fluids: LRS Total/Rate	499 / 72	509 / 72	518 / 72	539 / 72	552 / 72	556 / 20	567 / 20	570 / 20		580 / 20	587 / 20
CRI: Fentanyl Total/Rate	50.1 / 7.4	51.2 / 7.4	52.1 / 7.4	53.6 / 7.4	56 / 5.067	Ø / Ø	Ø / Ø				
Iso FI (%) / O².(L)	Ø / 1.5	Ø / 1.5	Ø / 1.5	Ø / 1.5	Ø / 1.5	Ø / 1.5	Ø / 1.5	Ø / 1.5		Ø / 1.5	Ø / 1.5

Ketamine 0.30mL IM @ 4:55pm, cefazolin 0.5mL IM @ 4:55pm

completed

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/ml Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL Oxytocin 20.00 Units/mL Diluted Fentanyl 10.00mg/mL Valium 5.00mg/mL Propofol 10mg/mL

Extubated @ 6:20pm
Returned to cage @ 6:25 [redacted]

Animal Chart (Original) *Anesthesia (Copy)* *Initials* [redacted] rev.7/15-PC15A

[redacted] 9/10/18

UCD 0639

23-01594_000676

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR ① 9/10/18 ~~07/17/2018~~

PROCEDURE: Cranial Implant	ROOM: [redacted]	AGE: 7yr 3m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: F
REQUESTOR: [redacted]	W/0: ~~2127~~ 2779 ③	② WT: ~~6.45~~ 7.24 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane, fentanyl and propofol, the animal's head was placed into the stereotaxic frame. The head was sterilely prepped. Paramedian incision made approximately 6cm in length along the midline. Fascia incised and temporalis muscle elevated bilaterally from temporal ridges. Fifteen millimeters anterolateral to bregma on the left, a burr hole was made using a cranial perforator. Exposed dura was incised and reflected anteriorly. Electrode implants were placed using investigational robotics. Cranial sealant was used to seal burr hole. This process was repeated on the right hemisphere. Two separate stab incisions were made 1.5cm off midline in the posterior portion of the exposure and transcutaneous ports were passed through the incision. The main midline incision was closed in an inverted, interrupted fashion using 3-0 vicryl in the fascia. The skin was closed using a running subcuticular stich using 4-0 monocryl. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss: minimal (<2cc).

	POST OPERATIVE CARE:
TIME IN:	Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days ④ Dexamethasone SID ~~x2~~ days (7) Cefazolin BID x7 days Omeprazole SID x7 days [redacted] SID x3 days
TIME OUT:	

SURGEON [redacted] ASSISTANT: ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

①-④ entry errors corrected [redacted] 9/10/18

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: [redacted] Home Room: [redacted] Date: 8/31/18
Wt (kg): 7.40 Age: 7yr Sex: M/F Procedure: [redacted] ET Tube size: 5.5mm
Investigator: [redacted] W/O# 2722 Project: [redacted] IV Catheter Placement: Ø

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.8mls	IM	~8:30				

Fluid Type Ø **Additives:** Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR- **0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-Ø) MAP ¬

Time:	8:40	9:00 am
Temp:		
160		
150		
140		
135		
130		
125	•	
120		
115		•
110		
105		
100	✓	✓
95		
90		
85		
80		
75		
70		
65		
60		
55		
50		
45	X	X
40		
35		
30	O	O
25		
20		
15		
10		
SIGH		
Fluids total/rate	N/A	
CRI:	N/A	
Iso FI (%)/ Oxygen (L)	1.6% / 2L	1.4% / 2L

Complete recovered @ 9:25a

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: mmu [redacted] Home Room: [redacted] Date: 7/25/18
Wt (kg): 7.51 Age: Sex: M/F Procedure: MRI- [redacted] ET Tube size: 5.5
Investigator: [redacted] W/O# 2244 Project: NRLAC IV Catheter Placement: R Saph

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	0.9 ml	IM	9:20	Ketoprofen	0.4 ml	IM	

Fluid Type LRS **Additives**: Ø Temp Probe: Y/N Blood pressure Cuff: Y/N
HR-•, RR-**0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP —

Time:	9:45	10:00	10:15
Temp:			
160			
150			
140			
135	.136		
130		.138	.132
125			
120			
115			
110			
105			
100			
95	✓	✓	✓
90			
85			
80			
75			
70			
65			
60			
55			
50			
45	X	X	X
40			
35	O	O	O
30			
25			
20			
15			
10			
SIGH			
Fluids total/rate	TOTAL FLUID VOLUME		
CRI:			
Iso FI (%)/ Oxygen (L)	1.5/2.0	1.5/2.0	1.5/2.0

Completed

[redacted]

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

734

8723 / SPF01
I.D. / PROJECT CODE

[redacted]
INVESTIGATOR / REQUESTOR

ANIMAL DATA [redacted]
ROOM / CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMM [redacted]
ANIMAL I.D.

2 / 12 / 18
DATE OF SAMPLE

P SEX | 6 YR 10 MO AGE | F KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL ____

CLINICAL SIGNS / PROBLEMS:

Pre - PE

HOSPITALIZED ☐ NO ☐ YES ____ - ____ ROOM CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs. ☐ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.9	X 10 ^3/ µl
RBC	5.03	X 10 ^6/ µl
HEMOGLOBIN	12.0	gm/dl
HEMATOCRIT	37.3	%
MCV	74	fl
MCH	23.9	pg
MCHC	32.3	pg/fl
PLATELETS	2.78	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.0 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.9 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	31	1829
LYMPHOCYTES	67	3953
MONOCYTES	1	59
EOSINOPHILS	1	59
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☑ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☑ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

2/12/18 [redacted]

2/12/18 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 2/12/18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

342

☐ VIRAL PRECAUTION

8723, SPF01
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA: [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

CLINICAL BIOCHEMISTRY

Mmu [redacted]
ANIMAL I.D.

2, 12, 18
DATE OF SAMPLE

F 6 YR 10 MO F KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID X COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre. PE

HOSPITALIZED NO☐ YES ☐ ____-____
ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN ____ AM PM TEMP ____ °C

DIETARY STATUS: UNKNOWN☐ FED☐ FASTED ☐ ____HOURS COMMENTS:____

SAMPLE: SERUM ☐ HEPARINIZED PLASMA☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	303	U/L	25		pH		
2		POTASSIUM (S,HP)	3.4	mM/L	16		ALK PHOS (S,HP)	146	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	107	mM/L	17		GGT (S,HP)	60	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	26	mM/L	18		LDH (S,HP)	139	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	15		19		CHOLESTEROL (S,HP)	133	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	4.1	mg/dl	20		TRIGLYCERIDE (S,HP)	27	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.3	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	17	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.5	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	69	mg/dl	24		hsCRP	<1	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.1	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.7	g/dl										
13		ALT (S,HP)	48	U/L										
14		AST (S,HP)	23	U/L										

REPORTED BY [redacted] DATE: 2/12/18

PERFORMED BY: CNPRC ☐ VMTH☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

Physical Exam Certificate
California National Primate Research Center

3781-

Animal number: MMU [redacted] Location: Date of exam: 2/12/18

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning Pre-project Pre-shipment

Details of Study/Sale requirements:

Negative TB Test Date:

Physical exam findings: (to be completed by Veterinary staff)

Weight: 7.00kg Temp: 100.2 HR: 180 RR: 42 BCS: 1.5+ Gender: M F Comments:

Integument	NAO	A	NE	
Oral Cavity	NAO	A	NE	
Eyes	NAO	A	NE	
Ears	NAO	A	NE	
Musculoskeletal	NAO	A	NE	
Thoracic Auscultation	NAO	A	NE	
Abdominal Palpation	NAO	A	NE	
Spleen	NAO	A	NE	
Liver	NAO	A	NE	
Lymph Nodes	NAO	A	NE	
Urogenital	NAO	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 2/12/18 Dates Reviewed: 911 Reviewers initials: [redacted]

Comments: NSF

Laboratory Results and review: (to be completed by Research Services or Veterinary staff)

Date: 2/13/18 CBC ECC CHEM U/A R/C Parasitology Reviewers initials: [redacted]

Comments: NSF

Imaging studies: (to be completed by Veterinary staff)

Date: 2/12/18 Radiographs: U/S exam: echo

Comments: No evidence of LVH Reviewers initials: [redacted]

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

X Approved for project Comments: Recheck BCS prior to surgery

____ Approved for project pending lab review

____ Approved for shipment

____ Stable weanling

____ Other

Examining Veterinarian: [redacted] Date: 2/12/18

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

452-453

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

NX

I.D. / PROJECT CODE: NRL03

INVESTIGATOR REQUESTOR: [redacted]

ANIMAL I.D.: MMU [redacted]

DATE OF SAMPLE: 3 / 26 / 20

ANIMAL DATA: ROOM - CAGE

SEX: M AGE: 9 YR 0 MO WEIGHT: 15.79 KG

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
☐ DIARRHEA
Swabs adjacent to implant.

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☐ NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S): Implant ① Exudate ②

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC 1 + 2	✓✓	
☐ FUNGI/YEAST		
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. Implant: 1+ Staph coagulase negative
2. Exudate: Few colonies Staph coagulase negative
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

REPORTED BY: [redacted]

REPORT DATE: 4-1-20

CLINICAL MICROBIOLOGY

2/2014

WHITE - ANIMAL'S CHART YELLOW - LABORATORY PINK - REQUESTOR

450

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

MICROBIOLOGY

NX

BZ59 NRL03
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

mmu [redacted]
ANIMAL I.D.

3 / 26 / 20
DATE OF SAMPLE

ANIMAL DATA: Ex6- 7
ROOM CAGE

M SEX | 9 YR 1 MO AGE | 15.8 KG WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: ☐ DIARRHEA Loose implant w/ mild crusting at margin

HOSPITALIZED NO☐ YES ☐

PRIOR THERAPY ☒NO ☐ YES
LIST ALL AGENTS:

SOURCE OF SPECIMEN(S) cranial implant margin

CULTURES REQUESTED	NEGATIVE RESULT	
	NEGATIVE	NO GROWTH
☐ ENTERIC SCREEN SHIGELLA, YERSINIA, SALMONELLA		
☐ CAMPYLOBACTER		
☐ YERSINIA (CLINICAL)		
☒ AEROBIC		
☒ ANAEROBIC	✓	
☒ FUNGI/YEAST	① ✓	✓
☐ LISTERIA		
☐ OTHER		

DIRECT MICROSCOPIC EXAMINATION

ORGANISMS IDENTIFIED

1. Aerobic: It mixed growth including Staph coagulase negative
2.
3.
4.
5.
6.
7.
8.

☐ SENSITIVITY TO ANTIMICROBIAL AGENTS: KIRBY- BAUER

ORGANISM NUMBER	DOXYCYCLINE (DO 30)	AZITHROMYCIN (AZM 15)	CEFAZOLIN (CZ 30)	CEFTRIAXONE (CRO 30)	ENROFLOXACIN (ENO 5)	NEOMYCIN (N 30)	PENICILLIN (P 10)	SULFA/TRIMETH (SXT 25)	VANCOMYCIN (VA 30)

①EE [redacted] 4-2-20

REPORTED BY: [redacted]

REPORT DATE: 4-2-20

CLINICAL MICROBIOLOGY

2/2014

WHITE: ANIMAL'S CHART YELLOW: LABORATORY PINK: REQUESTOR

Biopsy Report

Animal ID	MMU [redacted]	Report ID	69001	Report Complete	25-FEB-20
Sex	M	Death Type		Location	[redacted]
Age	9 yrs 0 mon	Weight (KG)		Work Performed	25-FEB-20
Investigator	[redacted]	Project	NRL03	Time Performed	12:00 AM
Pathologist	[redacted]	Clinician		Charge ID	BZ59
Resident	ROY	Hydration		Pathology Condition	

Biopsy Observation CYTOLOGY

Submitted is a smear preparation of fluid from the margins of a cranial implant, and a Gram stained slide of that same fluid. The sample contains primarily small to moderate numbers of neutrophils, many of which are hypersegmented, along with fewer macrophages, eosinophils, erythrocytes, keratin, and streaming nuclear and cellular debris. There are no bacteria observed within the Gram stained cells.

Biopsy Diagnosis

1 HEAD IMPLANT EXUDATE Suppurative

Biopsy Comments

The submitted fluid from the cranial implant is a suppurative exudate. No bacteria are observed in the Gram stained slide; however this does not rule out a pauciorganismal infection. Bacterial culture of the site should be considered if exudation continues.

1334

☐ VIRAL PRECAUTION

B259 / NRL03
I.D. PROJECT CODE

[redacted]
ANIMAL I.D.

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

[redacted]
INVESTIGATOR REQUESTOR

2 / 21 / 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M 9 YR 0 MO 16 KG
SEX AGE WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: ____ COLONY MANAGEMENT: ____ EXPERIMENTAL: ____

CLINICAL SIGNS / PROBLEMS:
Rev Cranial Implant

HOSPITALIZED NO ☒ YES ☐ ____ - ____
ROOM CAGE

PRIOR THERAPY ☒ NO ☐ YES
LIST ALL AGENTS:

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted ____hrs ☒ Anesthetized ☐ Other ____

PROCEDURE(S) REQUESTED: Cytology, Gram Stain

SPECIMEN: Cranial Implant Margins

RESULTS suppurative exudate

The submitted fluid is composed of small to moderate numbers of neutrophils, which are often hypersegmented, and fewer eosinophils, erythrocytes, macrophages, and keratin, and streaming nuclear and cellular debris. No bacterial organisms are observed on Gram stain.

[redacted] 2-25-2020

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Reply all Delete Junk Block ...

Cytology: mmu 46136

GP [redacted]
Tue 2/4/2020 4:55 PM
cnprc-outpatient; cnprc-hospital

Hello,

The sample (mild serosanguinous exudate, caudal margin) contains proteinaceous fluid, erythrocytes, and small numbers of neutrophils. The neutrophil numbers are increased relative to the amount of blood and suggest an inflammatory response, but there are no bacteria identified in the gram stain.

[redacted]
Comparative Pathology Laboratory
California National Primate Research Center
University of California

674

☐ VIRAL PRECAUTION

[redacted]
ANIMAL I.D.

6259, NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MISCELLANEOUS

[redacted]
INVESTIGATOR REQUESTOR

1 / 28 / 200
DATE OF SAMPLE

ANIMAL DA[redacted]
ROOM CAGE

M — SEX
9 YR 0 MO — AGE
16.3 KG — WEIGHT

PROCEDURE IS: X DIAGNOSTIC AID: _____ COLONY MANAGEMENT: _____ EXPERIMENTAL: _____

CLINICAL SIGNS / PROBLEMS: 1 wk post op cranial implants w/ sc exudate

HOSPITALIZED NO☐ YES ☐ ROOM CAGE

PRIOR THERAPY ☐ NO X YES
LIST ALL AGENTS: Many including steroids + abx

BLEEDING CONDITIONS: ☐ Squeezed – limb pulled ☐ Caught on run ☐ Fasted _____hrs ☐ Anesthetized ☐ Other_____

PROCEDURE(S) REQUESTED: Cytology + gram stain

SPECIMEN: Exudate from cranial implant site

RESULTS

The sample primarily consisted of degenerate red blood cells and cellular debris mixed with small numbers of neutrophils which have often hypersegmented and rare mononuclear cells. The gram stain did not demonstrate any bacteria.

The sample is most likely degenerate blood. The number of neutrophils present ~~based~~ is consistent with whole blood however many of them were hypersegmented.

MISCELLANEOUS

PC9 2/2014 WHITE- ANIMAL'S CHART YELLOW- LABORATORY PINK- REQUESTOR

Post-operative monitoring record

Date: 1-21-20 Animal# mmu[redacted] Procedure: Cranial implant

			Date	Date	Date	Date	Date	Date	Date
General Obervations			1-22-20	1/23/20	1/24/20	1/25/20	1/26/20	1/27/20	1/28/20
	Appetite		P	P	P	P	F	F	Fast
	Hydration		G	G	G	G	G	G	G
	Stool		N-pellets	N	N	N	N	N	N
	Incision		CDI	CDI	CDI	CDI	CDI	CDI	CDI
		Score						[redacted]	
Physiologic parameters									
Pupils									
	Normal	0	Ø	Ø	Ø	Ø			
	Dilated	2							
Respiratory Rate									
	Eupenic	0	Ø	Ø	Ø	Ø			
	Tachypnea	2							
Mucous membranes									
	Pink	0	Ø	Ø	Ø	Ø			
	Pale	2							
Posture									
	Sitting/standing upright	0	Ø	Ø	Ø	Ø			
	Hunched posture	1							
	Head between knees	2							
	Sitting, legs extended	2							
	Recumbent	3							
	Fetal position	3							
Activity									
	Moving normally in cage	0	Ø	Ø	Ø	Ø			
	Attention to wound	1							
	Guarding wound	2							
	Restless/pacing	2							
	Lack of interest in environment	2							
	Shivering/teeth grinding	3							
	Immobile	3							
	Ataxia, uncoordinated movement	3							
Vocalization									
	Vocalizes when stimulated	0							
	Lack of vocalization	0	Ø	Ø	Ø	Ø			
	Loud vocalization	3							
	High pitched vocalization	3							
Post-operative Score			Ø	Ø	Ø	Ø			
Initials:			[redacted]						

revised 7/2017

544

BZ59 / NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

☐ VIRAL PRECAUTION

MMM[redacted]
ANIMAL I.D.

HEMATOLOGY

[redacted]
INVESTIGATOR REQUESTOR

1 / 21 / 20
DATE OF SAMPLE

ANIMAL DATA: [redacted]
ROOM CAGE

M SEX | 8 YR 11 MO AGE | 16.2 KG WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

Pre Sx

HOSPITALIZED ☐ NO ☒ YES [redacted]
ROOM CAGE

PRIOR THERAPY ☒ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= / µl
CD8= / µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☒ Anethetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	5.6	X 10 ^3/ µl
RBC	5.34	X 10 ^6/ µl
HEMOGLOBIN	12.9	gm/dl
HEMATOCRIT	39.3	%
MCV	74	fl
MCH	24.1	pg
MCHC	32.8	pg/fl
PLATELETS	1.72	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.6 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 100 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 5.6 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	49	2744
LYMPHOCYTES	48	2688
MONOCYTES	2	112
EOSINOPHILS	1	56
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐+1 ☐+2 ☐+3
☐ INCREASED ☐+1 ☐+2 ☐+3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ POLYCHROMASIA ☐+1 ☐+2 ☐+3 ☐+4
☐ LEPTOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ POIKILOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ANISOCYTOSIS ☐+1 ☐+2 ☐+3 ☐+4
☐ ROULEAUX ☐+1 ☐+2 ☐+3 ☐+4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

[redacted] 1-22-20

1/22/20 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 1-22-20

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

345

☐ VIRAL PRECAUTION

BZ59 / NRL03
I.D. PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted]
ANIMAL I.D.

[redacted]
INVESTIGATOR REQUESTOR

CLINICAL BIOCHEMISTRY

1 / 21 / 20
DATE OF SAMPLE

ANIMAL DATA [redacted]
ROOM CAGE

M 8 YR 11 MO 16.2 KG
SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS:
Pre-Sx

HOSPITALIZED NO☐ YES ☒ [redacted]
ROOM CAGE

PRIOR THERAPY NO ☒ YES ☐
LIST ALL AGENTS:

TIME DRAWN 9 (AM) PM TEMP ____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☒ ____ HOURS COMMENTS: ____

SAMPLE: SERUM ☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐ SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX____ SLOT____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	145	mM/L	15		CPK (S,HP)	643	U/L	25		pH		
2		POTASSIUM (S,HP)	3.9	mM/L	16		ALK PHOS (S,HP)	96	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	105	mM/L	17		GGT (S,HP)	83	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	30	mM/L	18		LDH (S,HP)	948	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	14		19		CHOLESTEROL (S,HP)	123	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.4	mg/dl	20		TRIGLYCERIDE (S,HP)	181	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.7	mg/dl	21		BILI TOTAL (S,HP)	0.2	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	18	mg/dl	22		DIRECT	0.0	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	0.9	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	33	mg/dl	24		hsCRP	2	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	7.2	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	3.9	g/dl										
13		ALT (S,HP)	29	U/L										
14		AST (S,HP)	39	U/L										

REPORTED BY [redacted] DATE: 1-22-20

PERFORMED BY: CNPRC ☑ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL03	ANIMAL SP ID# MMU [redacted]	*DATE OF EVENT* *MO DAY YR* *1/21/20*

PROCEDURE: Cranial Implant	ROOM [redacted]	AGE: 8y11m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 4531	WT: 16.2 kg

SNOMED CODES	CODED BY:cm	SNOMED TERMS
Circle one: Experimental (XI) / Colony (SN)		
T-10101	P-yy444	Craniotomy
T-10101	P-1000	Surgical Incision
T-X2070, T-X2080	P-Y8971	L/R Recording Device Implantation
T-X2070, T-X2080	P-YY041	L/R Electrophysiology Readings
T-10101	P-1640	Surgical closure

DESCRIPTION OF PROCEDURES PERFORMED

Procedure: Electrode insertion survivability study

Animal prepared for surgery in normal manner. Once sedated thoroughly on isoflurane and fentanyl, the animal's head was placed into the stereotaxic frame. The head was sterilely prepped. Midline incision made approximately 6cm in length. Fascia incised and temporalis muscle elevated bilaterally from temporal ridges. Approximately 15 millimeters anterolateral to bregma, two 9mm burr holes were made on each side using a cranial perforator. Exposed dura was excised. Microelectrode implants were placed using investigational robotics. Surgiflo and titanium plate were used to seal burr hole. This process was repeated on the right hemisphere. A single separate stab incision was made 1 cm posterior to the primary incision in the midline and a transcutaneous port was passed through the incision. The main midline incision was closed in an inverted, interrupted fashion using 2-0 and 3-0 vicryl in the fascia. The skin was closed using a 4-0 monocryl running subcuticular stich. Electrophysiology was undertaken. Animal removed from stereotax and monitored.

Estimated blood loss: approximately 15cc.

TIME IN: 834 TIME OUT: 400	POST OPERATIVE CARE: Hydromorphone TID Q4h x3 days Buprenex SID (pm dose only) x3 days Dexamethasone SID x7 days Cefazolin BID x7 days Omeprazole SID x7 days Famotidine SID x3 days Levetiracetam BID x7 days

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

[redacted]

[redacted]ornia National Primat[redacted]nter: *Anesthesia Monitoring Sheet* ⑥ *Page* ~~2~~ ① *of* 2

Animal: ~~MMU~~ [redacted] ⑤ **Home Room:** [redacted] **Date:** 1-21-20 **Age:** ~~7y/B~~ **Sex:** (M) / F **Wt. (Kg)** ~~13.45~~ ⑦

Procedure: Neuro Sx **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** 4531 **Project/ID:** NRL03/B259

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP –, Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
Atropine	1.5	IM	8:21	Cefazolin	1.2ml	IV	9AM				
				Mannitol	40ml/20mins	IV	10:50A				
				Cefazolin	1.2ml	IV	11:00A				
				Cefazolin	1.2ml	IV	1:00P				

Del: 8:00 **Sx Table:** 8:10 **Prep:** 8:20 **Start:** 8:34 **Cut:** 8:34 **Proc:** 8:34 - 3:25 **Close:** 3:30 - 4:00 **Recovery** 5:00

Time	8:15	8:40	8:55	9:10	9:25	9:40	9:55	10:10	10:25	10:40	10:55	11:13	11:35	11:52	12:14	12:30	12:45	1:00	1:15	1:30	1:45	2:00	2:15	2:30
Temp	98°	98.3	98	97.8	97.6	97.3	97.1	97.0	97.1	97.1	97.1	97.2	97.5	97.6	97.8	98°	98.1	98.2	98.3	98.3	98.2	98.2	98.1	98.1
160																								
150																								
140																								
130																								
120	•	•	•																					
110				•	•	•		•		•														
100	✓	✓		✓	✓	✓	✓	✓	•		•	•	•	•	•	•	✓	✓	• ✓	• ✓	•	• ✓	• ✓	• ✓
90		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		▼	✓▼	▼	▼	▼	▼	▼	✓▼
80									▽	▽		▼	▼	▼	▼	▼								
70	—	—	▽		▽	▽	▽	▽																
60				▽				—	—	—	—					—	—	—	—	—	—	—		—
55	▲	▲					—					—	—	—	—									
50	×				—	—																		
45		×	×—	×—					△						(R)	(d) ▼	▲	▲	▲					
40					✕		△	△		△				△	✕△					△	△	△	△	
35				△	△	△					△	△		✕		✕				✕	✕	✕	✕	△ ✕
30			△			✕	✕	✕	✕	✕	✕	✕	△✕				✕	✕	✕					
25		Ø	Ø	Ø	Ø																			
20	Ø																							
15						Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
10																								
5																								
Sigh																								
Fluids: LRS (Total/Rate)	56 / 160	96 / 160	134 / 160	172 / 160	15.34 / 160	~~22.97~~ / 160	293 / 160	334 / 160	373 / 160	411 / 160	452 / 160	526 / 160	559 / 160	602 / 160	661 / 160	707 / 160	747 / 160	785 / 160	825 / 160	858 / 80	850 / 80	898 / 80	918 / 80	959 / 80
CRI: Fentanyl (Total/Rate)	4.17 / 16.2	8.13 / 16.2	11.53 / 14.2	14.86 / 14.2	20.4 / 14.2	23.94 / 14.2	25.60 / 14.2	29.17 / 14.2	32.62 / 14.2	36.15 / 14.2	39.73 / 14.2	44.1 / 14.2	49.2 / 14.2	53.0 / 14.2	58.2 / 14.2	62.37 / 14.2	65.47 / 14.2	69.25 / 14.2	72.90 / 14.2	76.29 / 14.2	80.12 / 14.2	83.4 / 14.2	86.8 / 14.2	90.5 / 14.2
Iso Fl (%) / Oxygen (L)	2.3 / 1	2.2 / 1	2.1 / 1	2.1 / 1	1.9 / [redacted]	1.7 / 1	1.7 / 1	1.7 / 1	1.6 / 1	1.6 / 1	1.7 / 1	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0	1.6 / 2.0

① error on 1 of 2 ② error 25bmp ③ RE[redacted] 1/2/20 ④ Error diastolic [redacted] ⑤ Incorrect patient MMU[redacted] ⑥ Incorrect Age 8y/3 [redacted]

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml
Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) ***Anesthesia (Copy)*** ***Initials*** [redacted] rev.6/19-PC15A

⑦ Incorrect Wt. 15.9kg [redacted]

UCD 0656

23-01594_000693

California National Primate Research Center: Anesthesia Monitoring Sheet *Page 2 of 2*

Animal: MMU [redacted] **Home Room:** [redacted] **Date:** 1-21-20 **Age:** 8yr **Sex:** (M) / F **Wt. (Kg)** 15.9

Procedure: Neuro Sx **ET Tube Size:** 6.0 **Investigator:** [redacted] **W/O#:** 4531 **Project/ID:** NRL03/3259

HR – •, RR – O, ETC02 – X, SP02 – ✓, Sigh – S, VENT – Ø, MAP – , Sys – ▼, Dias – ▲

Pre-Anesthesia:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:	Intra-Op:	Dose/ Amount:	Route:	Time:
				Cefazolin	1.2ml	IV	3:00p.				
				Hydromorphone	1.2ml	IV	3:55p.				

Del: _____ **Sx Table:** _____ **Prep:** _____ **Start:** _____ **Cut:** _____ **Proc:** _____ - _____ **Close:** _____ - _____ **Recovery** _____

Time	2:45	3:00	3:15	3:30	3:45	4:00
Temp	98	97.9	97.8	97.8	97.9	97.9
160						
150						
140						
130						
120						
110						
100	•	•	•		•	•
90	✓	✓	✓	✓	✓	✓
80	▼	▼	▼	▼	▼	▼
70						
60	—	—	—	—		—
55					—	
50				▲		
45					▲	
40	▲	▲	▲			▲
35	X	X		X	X	X
30			X			
25						
20						
15	Ø	Ø	Ø	Ø	Ø	Ø
10						
5						
Sigh						
Fluids: LRS (Total/Rate)	958 / 80	971 / 80	1006 / 80	1042 / 80	1116 / 80	1209 / 80
CRI: Fentanyl (Total/Rate)	94.0 / 14.2	97.39 / 14.2	101.3 / 14.2	104.3 / 14.2	D/C / D/C	
Iso FI (%) / Oxygen (L)	1.6 / 2	1.6 / 2	1.6 / 2	1.8 / 2.0	1.9 / 2.0	1.6 / 2.0

Complete

Ketamine 100mg/ml, Dexmedetomidine 0.5mg/ml, Atipamezole 5mg/ml, Ketoprofen 100mg/ml, Cefazolin 330mg/ml, Atropine 0.4mg/ml, Hydromorphone 10mg/ml, Buprenorphine 0.3mg/ml, Oxytocin 20 Units/Ml, Diluted Fentanyl 10mg/ml, Valium 5mg/ml, Propofol 10mg/ml

Animal Chart (Original) Anesthesia (Copy)

Initials: [redacted] rev.6/19-PC15A

UCD 0657

23-01594_000694

4748

B359 NRL42
I.D. PROJECT CODE

[redacted]
INVESTIGATOR REQUESTOR

ANIMAL DATA [redacted]
ROOM CAGE

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

☐ VIRAL PRECAUTION

MMU [redacted]
ANIMAL I.D.

9 / 28 / 18
DATE OF SAMPLE

M 7 YR 7 MO 13.82 KG
SEX AGE WEIGHT

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS:

HOSPITALIZED ☐ NO ☐ YES ____ ROOM ____ CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☐ Fasted ____ hrs ☐ Anethetized ☐ other ____

X COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	9.6	X 10 ^3/ µl
RBC	4.76	X 10 ^6/ µl
HEMOGLOBIN	11.6	gm/dl
HEMATOCRIT	35.2	%
MCV	74	fl
MCH	24.3	pg
MCHC	32.9	pg/fl
PLATELETS	3.72	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.9 gm/dl

PLASMA COLOR:
☐ NO ABNORMALITIES
X HEMOLYZED MOD
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 400 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 9.6 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	61	5856
LYMPHOCYTES	31	2976
MONOCYTES	5	480
EOSINOPHILS	3	288
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
X ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
X ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

[redacted] 9-28-18

[redacted] 9-28-18

REPORTED BY: [redacted]

REPORT DATE: 9-28-18

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

California National Primate Research Center Anesthesia Monitoring pg. 1 of 1

Animal Species and Number: mmu [redacted] Home Room: [redacted] Date: 7/25/18
Wt (kg): 13.46 Age: 7 y 5m Sex: (M)/F Procedure: MRI - [redacted] ET Tube size: 6.0
Investigator: [redacted] W/O# 2244 Project: NRLO L IV Catheter Placement: (R) S.P.

Pre-Anes Drug:	Dose /Amt:	Route:	Time:	Intra-op. Drugs:	Dose/Amt:	Route:	Time:
Ketamine	1.5ml	IM	8:10	ketoprofen	0.67ml	IM	9:21

Fluid Type LRS **Additives:** — Temp Probe: Y/(N) Blood pressure Cuff: Y/(N)
HR-•, RR-**0**, Sys-**v**, Dias-^, ETCO2-**X**, SPO2-√ S-sigh (if on Vent. put line through RR-**O**) MAP —

Time:	8:30	8:47	9:03
Temp:			
160			
150	.153	.154	
140			.147
135			
130			
125			
120			
115			
110			
105			
100			
95	✓	✓	✓
90			
85			
80			
75			
70			
65			
60			
55			
50			
45	X	X	X
40			
35			
30			
25			
20			
15	O	O	O
10			
SIGH			
Fluids total/rate	TOTAL FLUID VOLUME: 175ml		
CRI:			
Iso FI (%)/ Oxygen (L)	1.5/2.0	1.5/2.0	1.5/2.0

COMPLETE @ 9:13

Ketamine 100mg/mL Dexmedetomidine 0.5mg/mL Atipamezole 5mg/mL Ketoprofen 100mg/mL
Cefazolin 330mg/mL Atropine 0.4mg/mL Oxymorphone 1.0mg/mL Buprenorphine 0.3mg/mL
PC 15 Oxytocin 20.00 Units/mL Fentanyl 50.00mcg/mL Valium 5.00mg/mL

Initials: [redacted]

Ex41

Physical Exam Certificate
California National Primate Research Center

Animal number: MMU [redacted] Location: [redacted] Date of exam: 9/28/17

Purpose of exam (circle one): QU Screen-In QU Screen-Out Weaning (Pre-project) Pre-shipment

Details of Study/Sale requirements: NRL01 Lg Scale Brain-Machine Interface

Negative TB Test Date: 9/28/17

Physical exam findings: (to be completed by Veterinary staff)

Weight: 12.27 Temp: 104 HR: 170 RR: 32 BCS: 2.5 Gender: (M) F Comments:

Integument	(NAO)	A	NE	
Oral Cavity	(NAO)	A	NE	
Eyes	(NAO)	A	NE	
Ears	(NAO)	A	NE	
Musculoskeletal	(NAO)	A	NE	
Thoracic Auscultation	(NAO)	A	NE	
Abdominal Palpation	(NAO)	A	NE	
Spleen	(NAO)	A	NE	
Liver	(NAO)	A	NE	
Lymph Nodes	(NAO)	A	NE	
Urogenital	(NAO)	A	NE	

Other:

Review of animal health record: (to be completed by Research Services or Veterinary staff)

Date: 9/28/17 Dates Reviewed: 411 Reviewers initials: [redacted]

Comments: Mild Rear app reports post-relocation; Minor digit trauma - resolved.

Laboratory Results ~~and review~~: (to be completed by Research Services or Veterinary staff)

Date: 9/28/17 (CBC) ECC (CHEM) U/A R/C Parasitology Reviewers initials: [redacted]

Comments: CBC - WNL
Chem - WNL

Imaging studies: (to be completed by Veterinary staff)

Date: Radiographs: U/S exam:

Comments: Reviewers initials:

Recommendation:

I certify that this animal has been examined and to the best of my knowledge is:

[redacted] Approved for project Comments:

_____ Approved for project pending lab review

_____ Approved for shipment

_____ Stable weanling

_____ Other

Examining Veterinarian: [redacted] Date: 10/4/17

Original– Animal's record Bottom copy - Requestor PC17, Rev. 1/14/14

CALIFORNIA PRIMATE RESEARCH CENTER **INTERVENTION / SURGERY**	PROJECT: NRL02	ANIMAL SP ID# MMU [redacted]	DATE OF EVENT MO DAY YR 12/18/2017

PROCEDURE: Vasectomy - Autoligation	ROOM: [redacted]	AGE: 6y 10m
INVESTIGATOR: [redacted]	CAGE: [redacted]	SEX: M
REQUESTOR: [redacted]	W/0: 4118	WT: 13.1 KG

SNOMED CODES		CODED BY:	SNOMED TERMS
Circle one : Experimental (XI) / Colony (SN)			
T-78800	P-11070	Vasectomy	

DESCRIPTION OF PROCEDURES PERFORMED

An approximately 2 cm incision was made just caudal to each inguinal ring over the spermatic cord through the skin, subcutaneous tissues and tunica vaginalis. The vas deferens were bluntly dissected free. The vas deferens were transected, and the testicular ends were tied in an autoligation knot for occlusion. 3-0 Vicryl ligatures were placed on both the testicular and prostatic ends. The tunica was closed with 3.0 Vicryl in a simple continuous pattern. The skin was closed using 3.0 Vicryl in an intradermal pattern.

	POST OPERATIVE CARE: CIRCLE BELOW
TIME IN: 900 TIME OUT: 910	BUPRENEX IM SID X 1 DAY (given peri operatively) KETOPROFEN IM SID x 3 DAYS

SURGEON: [redacted] ASSISTANT: [redacted] ANESTHETIST: [redacted]

Animal Chart *Data Entry* *Surgery* *Requestor Veterinarian*

4885

☐ VIRAL PRECAUTION

CALIFORNIA PRIMATE RESEARCH CENTER

HEMATOLOGY

I.D. / PROJECT CODE: NRL01

ANIMAL I.D.: MMu[redacted]

INVESTIGATOR / REQUESTOR: [redacted]

DATE OF SAMPLE: 9 / 28 / 17

ANIMAL DATA: [redacted] ROOM / CAGE

SEX: M AGE: 6 YR 7 MO WEIGHT: 12.47 KG

PROCEDURE IS: DIAGNOSTIC AID ____ COLONY MANAGEMENT ____ EXPERIMENTAL X

CLINICAL SIGNS / PROBLEMS: Pre Project PE

HOSPITALIZED ☐ NO ☐ YES ROOM / CAGE

PRIOR THERAPY ☐ NO ☐ YES

FACS
☐ 3-4-8-20
☐ 4- COLOR
☐ Special Panel

CD4= /µl
CD8= /µl
CD4/CD8 RATIO=

BLEEDING CONDITIONS: ☐ Squeezed - limb pulled ☐ Caught on run ☒ Fasted 8 hrs ☒ Anesthetized ☐ other ____

☒ COMPLETE BLOOD COUNT: ELECTRONIC CELL COUNT, SMEAR EVALUATION, PLASMA PROTEIN, FIBRINOGEN

☐ ELECTRONIC CELL COUNT

WBC	10.5	X 10 ^3/ µl
RBC	5.13	X 10 ^6/ µl
HEMOGLOBIN	12.3	gm/dl
HEMATOCRIT	37.7	%
MCV	73	fl
MCH	24.1	pg
MCHC	32.7	pg/fl
PLATELETS	2.72	X 10 ^5/ µl

☐ RETICULOCYTES ____ % ____ X 10 ^5/ µl

☐ PCV (CENTRIFUGED) ____ %

☐ PLASMA PROTEIN 7.0 gm/dl

PLASMA COLOR:
☒ NO ABNORMALITIES
☐ HEMOLYZED
☐ ICTERIC
☐ LIPEMIC

☐ FIBRINOGEN 300 mg/dl

☐ SMEAR EVALUATION: TOTAL WBC 10.5 X 10 3 / µl
☐ CORRECTED WBC ____ X 10 3 / µl

DIFFERENTIAL	%	/ µl
METAMYELOCYTES		
BAND NEUTROPHILS		
SEG. NEUTROPHILS	71	7455
LYMPHOCYTES	20	2100
MONOCYTES	9	945
EOSINOPHILS		
BASOPHILS		
OTHER		
NRBC/100 WBC		

PLATELETS:
☒ ADEQUATE
☐ DECREASED ☐ +1 ☐ +2 ☐ +3
☐ INCREASED ☐ +1 ☐ +2 ☐ +3
☐ LARGE PLATELETS
☐ CLUMPED

ERYTHROCYTE MORPHOLOGY:
☒ ESSENTIALLY NORMAL
☐ HYPOCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POLYCHROMASIA ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ LEPTOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ POIKILOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ANISOCYTOSIS ☐ +1 ☐ +2 ☐ +3 ☐ +4
☐ ROULEAUX ☐ +1 ☐ +2 ☐ +3 ☐ +4

COMMENTS: PARTIALLY CLOTTED SAMPLE ☐

9/28/17 [redacted]

9/28/17 [redacted]

REPORTED BY: [redacted]

REPORT DATE: 9-28-17

CLINICAL HEMATOLOGY

White - Animal's Chart Yellow - Laboratory Pink - Requestor

PC13 (3/14)

2416

☐ VIRAL PRECAUTION

I.D. _____ / NRL01 PROJECT CODE

CALIFORNIA PRIMATE RESEARCH CENTER

MMU [redacted] ANIMAL I.D.

[redacted]

INVESTIGATOR REQUESTOR

CLINICAL BIOCHEMISTRY

9 / 28 / 17 DATE OF SAMPLE

ANIMAL DAT [redacted]

ROOM CAGE

M 6 YR 7 MO 2.47 KG

SEX AGE WEIGHT

PROCEDURE IS: ____ DIAGNOSTIC AID ____ COLONY MANAGEMENT X EXPERIMENTAL

CLINICAL SIGNS / PROBLEMS: Pre Project PE

HOSPITALIZED NO☐ YES ☐ ____ - ____ ROOM CAGE

PRIOR THERAPY NO☐ YES ☐
LIST ALL AGENTS:

TIME DRAWN _____ AM PM TEMP _____ °C

DIETARY STATUS: UNKNOWN ☐ FED ☐ FASTED ☒ 8 HOURS COMMENTS: _____

SAMPLE: SERUM ☒ HEPARINIZED PLASMA ☐ CITRATED BLOOD ☐ URINE ☐

SAMPLE COLOR: NO ABNORMALITIES ☒ HEMOLYZED ☐ ICTERIC ☐ LIPEMIC ☐

PANEL: PP2 ☐ PP3 ☐ CHEM 20 ☒ SPECIAL PANELS ☐ (ARRANGE WITH LAB) CLINICAL SERUM BANK ☐ BOX_____ SLOT_____

SERUM/PLASMA										URINE				
#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS	#	✓	TEST	RESULTS	UNITS
1		SODIUM (S,HP)	143	mM/L	15		CPK (S,HP)	201	U/L	25		pH		
2		POTASSIUM (S,HP)	3.5	mM/L	16		ALK PHOS (S,HP)	127	U/L	26		SODIUM		mmol/L
3		CHLORIDE (S,HP)	106	mM/L	17		GGT (S,HP)	47	U/L	27		POTASSIUM		mmol/L
4		TCO_2 (S,HP)	25	mM/L	18		LDH (S,HP)	247	U/L	28		CHLORIDE		mmol/L
5		ANION GAP (3+4)-(1+2)	16		19		CHOLESTEROL (S,HP)	101	mg/dl	29		PHOSPHOROUS		mg/dl
6		PHOSPHOROUS (S)	3.3	mg/dl	20		TRIGLYCERIDE (S,HP)	29	mg/dl	30		CALCIUM		mg/dl
7		CALCIUM (S,HP)	9.5	mg/dl	21		BILI TOTAL (S,HP)	0.3	mg/dl	31		MAGNESIUM		mg/dl
8		BUN (S,HP)	21	mg/dl	22		DIRECT	0.1	mg/dl	32		CREATININE		mg/dl
9		CREATININE (S,HP)	1.1	mg/dl	23		INDIRECT		mg/dl	33		MICRO PROTEIN		mg/dl
10		GLUCOSE (S,P,HP)	86	mg/dl	24		hsCRP	3	mg/l	34		P/C RATIO		mg/dl
11		TOTAL PROTEIN (S)	6.7	g/dl						35		OSMOLALITY		mOsm/kg
12		ALBUMIN (S)	4.4	g/dl										
13		ALT (S,HP)	45	U/L										
14		AST (S,HP)	24	U/L										

REPORTED BY [redacted] DATE: 9-28-17

PERFORMED BY: CNPRC ☑ VMTH ☐ OTHER ☐

CLINICAL BIOCHEMISTRY

1/2014

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
3/26/20					SO: Evaluated while sedated, as reported,	
					cranial implant is mobile. There is	
					strong attachment from the left,	
					mild mobility w/ pressure on caudal	
					margin, and no resistance w/ pressure	
					from R & rostral margins. Implant	
					moves up to 3 mm w/ minimal pressure.	
					Consulted w/ other vets & SPAS,	[redacted]
					consensus is to euthanize today.	
3-26-20	15.79				1. SCI KET IM D→ NECROPSY PER REQUEST	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

BC10 Standard Drug concentrations: Ketamine 100mg/mL Dexmedetomidine 0.50mg/mL Atipamezole 5.0 mg/mL Diazepam 5.0mg/mL

Animal ID# [redacted]

California National Primate Research Center

Page # 32 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/19/2020 MMU [redacted]					LOCATION: [redacted] / 1.6 MLS KET	
WT:	CAGE TIME: 9:25	15MIN 2	30MIN 2	45MIN 3	1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___	[redacted]
3/20/20		G	G	N	SO: BAR, OP: cranial implant, (P) Re: poor app above 10; animal also verbally reported for emesis after eating more chow + supps. Vomit was cleaned prior to observation. Ate no chow yesterday, ate 8 chow this morning. On observation - Ate fig bars + grapes, readily moved around cage + appeared bright/active. A: stable cranial implant animal, 2nd recent report for poor app, WT stable P: CTM on OP 1x/wk	[redacted]
3/23/20		G	G	N	SO: BAR OPM: cranial implant Implant is CDT, No d/c or Scabbing Skin apposed well to implant. MMU does not appear to be picking A: Stable cranial implant P: D/C from OPM, CTM on LTOP, cont w/ Scheduled implant cleanings.	[redacted]
3-26-20					MMU [redacted] W/O 6696 NRL03 1.6 KET / CAGE TIME: 9:40 15MIN 1, 30MIN 2, 45MIN 3, 1HR___ 1.25HR___, 1.5HR___, 1.75HR___, 2HR___	[redacted]
3-26-20					Cranial Implant CLEANING 1.6 mls Ketamine ____ mls Dexmedetomidine/Atipamizole reversal or chaired cleaning Implant/post edges cleaned and hair trimmed Novlsan/Betadine was used to clean the implant. Discharge: Y / N MODERATE CRUSTINOSS AROUND IMPLANT. Amount of discharge: A SMALL DROP OF DISCHARGE Color: Red Additional Treatment: ____	VET COLLECTED CULTURE + SLIDES, IMPLANT IS LOOSE TODAY ANCHORED A LITTLE IN THE BACK + LEFT SIDE.	[redacted]

(1) pages incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamazole 5.0 mg/ml; Diazepam [redacted]

Animal ID# MMU [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/10/20					A: stable animal w/ cranial implant	
					P: VSV 1x/wk on OP, continue regular implant cleaning	[redacted]
3-11-20		G	G	CC	SO BAR, RE: crusty head; mild crusty scabs build	
					up at margins. Animal Active - NEPD.	
					Animal seems to be leaving alone. NO swelling	
					or erythema noted. A: Stable implant. Animal.	
					P. ctm on mlt or opm.	[redacted]
3-11-20						
					Cranial Implant CLEANING	
					0 mls Ketamine 0 mls Dexmedetomidine/Atipamizole	
					reversal	
					Implant/post edges cleaned and hair trimmed	
					Nolvasan/Betadine was used to clean the implant.	
					Discharge: Y / N MILD CRUSTINESS AROUND	
					Amount of discharge: THE EDGE OF THE IMPLANT	
					Color:	
					Additional Treatment: —	
						[redacted]
3/15/20		G	G	N	SO: BAR, paired Re: crusty head; mild crusting	
					at skin margins, no moisture, bright & active,	[redacted]
					no attention to skin margins or implant	
3/16/20		P	G	N	SO: BAR (P) OP: cranial implant; RE: poor app.; according to	
					chow log, MMU ate 0/9 PM chow. Did not receive extra	
					treat yesterday. Readily ate offered fig bars. Implant margin	
					C+D w/ mild scabbing.	
					A: 1st recent report of poor app	
					P: CTM 1x/wk on OP for cranial implant, + as reported	[redacted]
3-19-20						
					Cranial Implant CLEANING	
					1.6 mls Ketamine ____ mls Dexmedetomidine/Atipamizole	
					reversal	
					Implant/post edges cleaned and hair trimmed	
					Nolvasan/Betadine was used to clean the implant.	
					Discharge: Y / N NO CRUSTINESS AROUND	
					Amount of discharge: IMPLANT	[redacted]
					Color:	
					Additional Treatment: NONE	

Obs Form 12-16

PC10 Standard Drug concep

= Bloody

mls Diazepam 5 Omeprol

① pages incorrectly numbered

23-01594_000703

UCD 0666

Animal ID# MMU [redacted]

California National Primate Research Center

Page # 30 (D)

Date	Weight (kg)	Appetite (G, F, P) Ⓟ	Hydration (G, F, P) Ⓟ	Stool (N, SS, L, B) Ⓟ	Observations	Initials
2/29/20	unk'd				A: staple implant. P: see 2/25.	[redacted]
3/3/20		G	G	N/C	SO: BAR OPM (P) cranial implant	
					skin edges are clean & not inflamed	
					skin appears healthy no d/c	
					cytology (2/25) suppurative exudate	
					no bacteria and R/O paucibacillary	
					inf. A: scalp implant currently	
					P: ✓ weekly consider re✓ cytology	
					+/- culture when excel implant	[redacted]
3/3/20						
					Cranial Implant CLEANING	
					___mls Ketamine ___mls Dexmedetomidine/Atipamizole	
					reversal or chaired cleaning	
					Implant/post edges cleaned and hair trimmed	
					Novisan/Betadine was used to clean the implant.	
					Discharge: Y / N	
					Amount of discharge: N/A	
					Color: N/A	
					Additional Treatment: N/A	
						[redacted]
3/6/20		G	G	N	SO: BAR (P) OPM: Cranial implant Margins	
					CDT NEPD, MMU does not appear to	
					be picking A/P - see 3/3	[redacted]
3/6/20	15.8				Box weight	[redacted]
3/8/20		G	G	C	SO BAR (P) Re: crusty head, confirmed	
					mild crusting around the implant	
					no erythema or d/c A/P see 3/3	[redacted]
3-10-20		G	G	C	SO BAR (P) RE: head crusty bloody: mild crusty	
					build up at margins. NO picking noted at	
					observation. Animal is active - NEPD. A/P see 3/3	[redacted]
3/10/20		G	G	N	SO: BAR (P) OP: cranial implant, margin is CTD w/	
					v. mild scabbing no erythema or d/c	[redacted]

(D) pages incorrectly numbered [redacted] 2/3/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam [redacted]/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 29 ~~79~~ (1)

Date	Weight (kg)	Appetite (G, F, P) (1)	Hydration (G, F, P) (1)	Stool (N, SS, L, B) (2)	Observations	Initials
2/24/20		G	G	N	SO: BAR, (P), OPM: Cranial implant. Re:	
					Crusty head. Margins WNL, no crusting	
					head implant CDI. NO d/c. NEPD.	
					A: Stable head implant	
					P: Vis ✓ 1x/week	
					Consider DIC to LTOP if remains	
					stable	[redacted]
2/25/20		G	G	G	SO: BAR (P) OPM: Cran implant –	
					margins are v. clean A: Stable implant	
					P: V1/wk & if no problems/remains stable	
					consider DC to LTOP	[redacted]
2-26-20		G	G	CC	SO BAR (P) op/Re: crusty head: mild crusty build	
					up around head implant. Implant Dry and will	
					be cleaned later today. Animal stable.	
					A/P see above 2/25.	[redacted]
2-26-20						
					Cranial Implant CLEANING	
					0 mls Ketamine 0 mls Dexmedetomidine/Atipamizole	
					reversal	
					Implant/post edges cleaned ~~and hair trimmed~~	
					Nolvasan/Betadine was used to clean the implant.	
					Discharge: Y / N VERY MILD CRUSTINESS	
					Amount of discharge: AROUND THE EDGE OF THE	
					Color: SKIN.	
					Additional Treatment: NONE	
						[redacted]
2-28-20		G	G	N	SO BAR (P) op: cranial implant: Implant looks	
					C+D – NO crusty build up. NO Erythema	
					or swelling noted. Animal is active with	
					NEPD. Animal stable.	[redacted]
2/29/20		G	G	N	SO: BAR (P) Re: crusty head; ↓ crust, d/c, swelling, or erythema seen	[redacted]
					@ implant. NEPD.	[redacted]

(1) Page incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # ~~78~~ 28 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/20/20					Area/skin around cran implant is very clean P. CM 1/wk	[redacted]
2-21-20	15.80				[redacted] [redacted] 2/21/2020 1.8 mls Ket. BCS=3.5 Tartar: 0 1 2 3 4 Teeth Scaled Y/N TB Test: R Eye 24hr___ 48hr___ 72hr___ wt. 15.80 ANIMAL MONITORED UNTIL RECOVERED	[redacted]
2/21/20		Fast	G	N	SO: BAR, (P), OPM: Cranial implant. Small amount of yellow crusting at implant margin w/ yellow d/c on implant. Noted small amt of scratching at head implant during observation. No erythema at implant, possible mild swelling at implant margins. Moving well pupils WNL.	[redacted]

[redacted]

PHYSICAL EXAM

Date 2-21-20 Weight 15.80 BCS 3.5

HR 156 RR 30 TEMP 101.1

☐ Project Code

☑ Shave Tattoo

1. Integument stable cr. implant
2. Oral Cavity mild tartar, scaled
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal WNL
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NE

SO: Expressed 1 drop serous fluid from skin margin. very mild crusting. Skin adhered to underlying tissue, sm. amt excess skin, but no swelling + edges not rolling in. Submitted cytology, SRA cleaned w/ DNS

A: Stable implant

P: VTS ✓ 1x/wk, no remarks stable, consider D/C to [redacted]

Animal may be unpaired or individually housed while receiving veterinary care

(1) pages incorrectly numbered [redacted] 3/31/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Standard Dose representations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5 [redacted]

Animal ID# [redacted]

California National Primate Research Center

Page # 27 ~~17~~

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2/11/20		G	G	N	SO: BAR (Prior to implant cleaning) mild crusting around implant - no erythema or swelling	[redacted]
2/12/20		G	G	N	SO: BAR (Implant cleaning yesterday) OPM cranial implant clear today A: stable implant P: ✓ implant d/w	[redacted]
2-12-20		G	G	CC	SO BAR: op, cranial implant / RE: bloody head; Implant area has mild scale build up with dried blood ~~no food~~ ① front. possible picking by animal. A: stable animal / implant. P: ctm per A/P on 2-12-20 above, on opm.	[redacted]
2/14/20		F	G	N	SO: BAR, ① OPM: Cranial implant. Ate treats no nurlogical signs. Implant intact, margins have yellow crusting w/possible mild swelling at margins. NEPD. A: Mild crusting and swelling at head implant P: ✓ implant 1x/week CTM on OPM, SRA's to perform implant cleanings	[redacted]
2/16/20		G	G	N	SO: BAR , Re: Poor appetite. Ate _____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	Ate all chow (AM) per food log. NEPD. [redacted]
2/17/20		G	G	CC	SO: BAR RE: poor app; no chow in cage, all treats/ supplements eaten, eagerly took treats, animal is paired A: 2nd recent report for poor app P: CTM on routine MH	[redacted]
2/20/20		G	G	N	SO: BAR OPM Cranial implant	[redacted]

① EE [redacted] 2-12-20

① Dates incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

DC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Alfaxalone 5.0 mg/ml; Diazepam 5.0mg/ml

23-01594_000707

UCD 0670

Animal ID# [redacted]

California National Primate Research Center

Page # 26 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
2-6-20		G	G	a	SO BAR, RE: crusty head: Animal has mild scabbing around implant. Animal Active with NEPD. Readily took treats and ate them.	[redacted]
2/7/20	160					
2-7-20		G	G	N	SO BAR, OP: Cranial implant: mild scabbing around implant. Animal will occasionally touch around implant, but no trauma noted. Sts healed well skin edges apposed well. Animal Active and responsive - NEPD. A: stable Animal w/ head implant. P: ctm on opm/mH.	[redacted]
2/8/20		G	G	N	SO: BAR (P) RE: HEAD CRUSTY; MILD AMOUNT OF DRIED DISCHARGE AROUND IMPLANT. Ø SWELLING OR ERYTHEMA. NEPD, READILY ATE TREATS. A/P: SEE 2/5 ENTRY	[redacted]
2-10-20		G	G	CC	SO BAR (P), OP: Cranial implant: mild crust/scabs around implant. NO Erythema, swell or bruising. Animal is Active with NEPD. Readily took treats. A: stable Animal w/ implant. P: ctm on opm/mH. See A/P on 2/5 also.	[redacted]
2-11-20						

Cranial Implant CLEANING
Ø mls Ketamine Ø mls Dexmedetomidine/Atipamizole reversal
Implant/post edges cleaned and hair trimmed ✓
Nolvasan/Betadine was used to clean the implant.
Discharge: Y / N
Amount of discharge: 1 DROP OF CLEAR YELLOW FROM TOP OF IMPLANT
Color: CLEAR YELLOW
Additional Treatment: NONE

[redacted]

(1) PO Ofs incorrectly numbered

Obs Form 12-16-2011 G = Good, F = Fair, P = Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamazole 5.0 mg/ml; Diazepam 5.0mg/ml [redacted]

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1-31-20		G	G	N	SO BAR OP: Cranial Implant: Animal Active	
					NEPD. Grooming self at observations. mild	
					Swelling and Erythema at sts lines.	[redacted]
2/1/20		F	G	N	SO: BAR RE: poor appp, crusty Head;	
					Small amt crusty/dried sensanguinous	
					D/C at implant margins. Ø Enytrema or	
					Swelling, Not attentive to area. Animal	
					Is moving well w/ NEPD.	
					A: Stable animal post Implant Placement	
					P: Await Labs, CTM 3x/wk on OP.	[redacted]
2-3-20		G	G	CC	SO BAR op: cranial implant; Implant CTD with light	
					scabbing. Animal is active. -NEPD. Grooming self	
					at observations. Swelling and erythema resolving.	[redacted]
2-5-20						
					Cranial Implant CLEANING	
					Ø mls Ketamine Ø mls Dexmedetomidine/Atipamizole	
					reversal CHAIRED CLEANING	
					Implant/post edges cleaned ~~and hair trimmed~~	
					Nolvasan/Betadine was used to clean the implant.	
					Discharge: Y / N	
					Amount of discharge: 1 DROP COMING DOWN BACK OF HEAD	
					Color: Clear Yellow	
					Additional Treatment: NONE	
						[redacted]
2/5/20		G	G	CC	SO BAR OPN cranial implant Obs.	
					mild/mod crusting around implant	
					Cytology from 2/4 revealed only	
					inflammation - no signs of inf.	
					A: Stable post cran. implant P: CTM	
					implant margins/cleaning 1/wk	
					C+T PRN ✓ AHS implant 1/wk	[redacted]

① pages incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

DC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamozole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 24

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/28/20						
					Cranial Implant CLEANING	
					0.7 mls Ketamine 0.3 mls Dexmedetomidine/Atipamizole	
					reversal or chaired cleaning	
					Implant/post edges cleaned and hair trimmed	
					Novlsan/Betadine was used to clean the implant.	
					Discharge: (Y) N	
					Amount of discharge: 10-15 ml	
					Color: Serosanginous	
					Additional Treatment:	
					collected cultures and cytology	[redacted]
1/28/20					S: Evaluated while sedated. On palpation	
					of top of head there is a "crepitus like"	
					sensation on either side - just cranial to	
					percutaneous port. Confirmed no SC gas	
					w/ ultrasound - appears to be 2° to tissue	
					moving over silicone coated wires.	
					On removal of collar (around port) a large vol.	
					bloody fluid was expressed from SC	
					pocket over entire sx site (~10-15 mls)	
					collected sample for cytology. No fluid	
					present within port. Minor irritation	
					of skin that was under collar - consulted	
					w/ lab staff and agree to replace collar	
					non loosely to facilitate fluid drainage.	
					A: Recovering post implant placement,	
					SC tissue not yet adhered.	
					P: Admit to OP for further monitoring	
					+ VS ✓ 3x/wk	[redacted]
1/30/20		WELL			SOPAR Incision CDI & crusting d/c	
					caudal & cranial implant A/P see 1/29	[redacted]

Dr. [redacted] Incorrectly numbered [redacted] 1/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam [illegible]/ml

Animal ID# [redacted]

California National Primate Research Center

Page # ~~73~~ 23 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ②	Observations	Initials
1/25/20	(comed)				No CNS signs. Very bright + alert	
					A: stable 4d post-cranial implant	
					P: see 1/24	[redacted]
1/26/20		G	G	N	SO: BAR, ate fruit & veggies, left RC, animal appears to be ambulating well, normal mentation, sts CDI, implant appears stable, good stool production	[redacted]
					SO2: BAR, no scratching observed. Inc CDI w/ mild scabbing, implant stable, no d/c. Slack-jaw appearance almost resolved.	
					A: stable 5d post-cranial implant	
					P: CTM via POM, cont. tx as planned	[redacted]
1/27/20		F	G	N	SO: BAR, ate fruit, not veggies; drank ~1/4 water, head incision CDI w/ scab	[redacted]
1/28/20		F	G	N	SO: BAR POM: Bright, active, Incision CDI Fair amt of food Eating 1/2 of supps mild scabbing around implant. No CNS signs A: stable 6d post cranial implant P: Finish POM, all tx, release 1/29 to eval implant & then relocate to home cage	[redacted]
1/28/20		F/S	G	N	SO: BAR, mentation WNL; scratching occasionally; head incision CDI; implant intact	[redacted]
1/28/2020	5.64					[redacted]
1-28-20					MMU [redacted] 1.7 MLS KET/ D->6012 W.O. 4636 NRL03 CAGE TIME: 11:45 15MIN 1, 30MIN 2, 45MIN 3 1HR___ 1.25HR___, 1.5HR___, 1.75HR___, 2HR___	
						[redacted]

(1) Pt was incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P = Poor, N = Normal, SS = Semi Solid, L = Liquid, B = Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 22 ~~20~~ ①

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1/23/20					SO: animal readily ate blueberries (~ 1/4 c.)	
					this afternoon. Uninterested in strawberry &	
					clementines.	[redacted]
1/24/20		P	G	N	SO: BAR, did not eat supps, did not drink	
					water or kool-aid. Char in cage. Chewed	
					on some apple. Scratching and mild	
					head shaking. Pupils WNL. Head inc	
					CDI, Minor scratch marks on (R) cheek.	
					MM=Pink. (R) eye lid mild erythema.	
					No boost soaked chow in cage. Implant	
					CDI, margins WNL. NEPD. s	[redacted]
1/24/20		P	G	N	SO: BAR. Animal was given many diff	
					supps throughout the day and ate	
					a number of diff supps (prunes, apricots	
					watermelon, berries, etc) on to	
					fair out of food. No CNS signs	
					A: stable 3d post cranial implant	
					P: ✓ AHS, incision daily. Pony	
					long supps to encourage intake.	
					Cont Rx (Cef, Dexamethasone, Keppra,	[redacted]
					Famotidine) 1/27	
1/25/20		P	G	N	SO: BAR, pom cran inj., good mentation, implant + margins	
					CDI, ↓ attn paid, ↓ head shaking. occ. scratching @ R	
					neck seen, 3 pinpoint scabs. ~1/4 water consumed, adq stool	
					volume. No int. in oral keppra (in date).	[redacted]
					SO2: ate oral rx in apple.	[redacted]
					SO3: ate 2 partial chow + part of supps - readily took apple	
					Normal stool, adequate amt, implant margins C+D, no d/c inc CDI	

① pages incorrectly numbered [redacted] 3/30/20

MMU [redacted] M
8yrs 11mos 16.29kg NRL03

Dexamethasone 10 mg/mL
0.12 mg/kg Dose — 2. mg Total Dose
0.20 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-26-2020 End 01-26-2020

MMU [redacted] M
8yrs 11mos 16.29kg NRL03

Dexamethasone 10 mg/mL
0.06 mg/kg Dose — 1. mg Total Dose
0.10 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-27-2020 End 01-27-2020

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Obs Form 12-16-2011

23-01594_000712

UCD 0675

Animal ID# [redacted]

California National Primate Research Center

Page # 21 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
1/22/20					A: Good post op recovery. Incision	
					starting to heal by 1st int	
					P: Cont PRN daily. Encourage intake	
					w/ supps. Finish tx Cef (1/27), Keppra (1/27)	
					Famotidine (1/27), dexamethasone (1/25)	
					buprenex (1/23) & benadryl (1/23)	[redacted]
1/23/20		P	G	N	SO: BAR, Drank ½ Kool-aid, didn't eat supps	
					mild periocular erythema; incision intact w/	
					scabbing; implant CDI; mentation WNL	[redacted]
						[redacted]
1/23/20		P	G	N	SO: BAR. Ate some supps mod out of	
					stool under cage. NO CNS signs	
					Incision CDI w/ mild scabbing. Cont prunts	
					A: ↓ intake but is ok (not improving	
					from yesterday) ② Incision CDI &	
					③ Cont prunts	
					P: Cont PRN ✓ AHS & increase daily	
					Cont tx: Supps & Cef (1/27), Famotidine (1/27)	
					↓ Keppra for the next 3d, start ½ inc	
					dexamethasone daily. Discuss daily	
					to move home.	
					/	[redacted]

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Dexamethasone 10 mg/mL
0.50 mg/kg Dose — 8. mg Total Dose
0.80 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-24-2020 End 01-24-2020

[redacted] Modified

Dexamethasone 10 mg/mL
0.12 mg/kg Dose — 2. mg Total Dose
0.20 mLs Volume — IM Rte — SID Freq — 2 Days
Start 01-25-2020 End 01-26-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 11.9 mg Total Dose
1.20 mLs Volume — IM Rte — SID Freq — -2 Days
Start [redacted] End [redacted]23-2020

MMU [redacted] M
8yrs 11mos 16.29kg NRL03

Dexamethasone 10 mg/mL
0.25 mg/kg Dose — 4.1 mg Total Dose
0.40 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-25-2020 End 01-25-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Levetiracetam 100 mg/mL
14.00 mg/kg Dose — 223 mg Total Dose
2.20 mLs Volume — SC Rte — BID Freq — 3 Days
Start 01-21-2020 End 01-23-2020

MMU [redacted] M
8yrs 11mos 16.29kg NRL03

Levetiracetam 250 mg/table
7.00 mg/kg Dose — 114 mg Total Dose
0.50 tabs Volume — PO Rte — BID Freq — 3 Days
Start 01-23-2020 End 01-25-2020

(1) pages incorrectly numbered [redacted] 3/30/20

① = Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/mL; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Page # 70 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
1-22-20		P	S	N/A	SO: BAR, PS-∅ Active in cage, looking	
					incision/implant alone. NA interested in treats, food.	[redacted]
					SO2: animal was moved into larger cage, easily	
					moved into jump box, animal appears to be	
					ambulating well, no sign of incoordination or	
					weakness, appears to have normal mentation, no	
					asymmetry in face or pupils, sts am COI, mild	
					scabbing, no sign of picking, no attention to implant	
					or incision, implant appears stable & secure,	
					multiple superficial abrasions on R/L cheek, face	
					& neck, unable to determine if these are secondary	
					to shaving or excoriations from scratching, observed	
					animal scratching at cheeks, not interested in food at	
					this time	[redacted]
1/22/20		F	G	N	SO2: Bone CBC (1/21) & Chem 20 (1/21) WNL	
					Animal was a bit slow to recover initially	
					w/ mild tongue swelling +/- slack	
					jaw. Animal is very tall & hit his	
					head on the cage twice yesterday	
					when not fully recovered so he was	
					switched to a larger cage this am.	
					He was quite active most of the night	
					& seen interested in female neighbor. He	
					was not obs. sleeping. Today - no CNS	
					signs, moving around cage well, eating	
					a percent of supps. Incision is COI	
					w/ facial/head edema. Prurits from	
					hydromorphone so started buprenex	
					& switched to buprenex today	

MMU [redacted] M
8yrs 11mos 16.29kg NRL03

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .5 mg Total Dose

1.60 mLs Volume — IM Rte — BID Freq — 2 Days
Start 01-20-2020 End 01-23-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Hydromorphone 2 mg/mL
0.15 mg/kg Dose — 2.4 mg Total Dose

1.20 mLs Volume — IM Rte — TID Freq — 2 Days
Start 01-21-2020 End 01-22-2020

① Pain scale [illegible] [redacted] [illegible]

Obs Form 12-16-2011

G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

23-01594_000714

UCD 0677

Page # 19 Log ①

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
12-27-19	15.8					[redacted]
1-10-20	15.9					

1/21/20 MMU [redacted] 1.6 MLS KET/D-> SURGERY PREP W/O 4531 NRL03

WT: 16.29

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Hydromorphone 2 mg/mL
0.15 mg/kg Dose — 2.4 mg Total Dose
1.20 mLs Volume — IM Rte — TID Freq — 3 Days
Start 01-21-2020 End 01-23-2020
first dose given in sx

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .5 mg Total Dose
1.60 mLs Volume — IM Rte — SID Freq — 3 Days
Start 01-21-2020 End 01-23-2020

Modified

Diphenhydramine 50 mg/mL
3.00 mg/kg Dose — 49 mg Total Dose
1.00 mLs Volume — IM Rte — BID Freq — 3 Days
Start 01-21-2020 End 01-23-2020

Levetiracetam 100 mg/mL
14.00 mg/kg Dose — 223 mg Total Dose
2.20 mLs Volume — SC Rte — BID Freq — 7 Days
Start 01-21-2020 End 01-27-2020
Dose Ovrd

Famotidine 10 mg/mL
0.50 mg/kg Dose — 8. mg Total Dose
0.80 mLs Volume — IM Rte — SID Freq — 7 Days
Start 01-21-2020 End 01-27-2020

Dexamethasone 10 mg/mL
0.33 mg/kg Dose — 5.3 mg Total Dose
0.50 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-26-2020 End 01-26-2020
Dose Ovrd

Water
1.00 bottle(1L)/anima Dose — 1. Bottle(1L) Total Dose
1.00 Bottle(1L) Volume — PO Rte — SID Freq — 7 Days

SO: Rec'd in [redacted] prep wo# 4531, project NRL03
Surgically prepped, performed cranial implant
See anesthesia log & surgery report. Recovered, returned to home cage. Monitored until fully alert.
A: cranial implant
P: POM X 7 days, Start RX

✓ Charges ✓ Admit ✓ RX ✓ Supps ✓ Move Sheet
✓ Surgery Log ✓ Anesthesia Log ✓ Surgery Report

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Dexamethasone 10 mg/mL
1.00 mg/kg Dose — 16 mg Total Dose
1.60 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-21-2020 End 01-21-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Dexamethasone 10 mg/mL
0.70 mg/kg Dose — 11.1 mg Total Dose
1.10 mLs Volume — IM Rte — SID Freq — 2 Days
Start 01-24-2020 End 01-25-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Dexamethasone 10 mg/mL
0.75 mg/kg Dose — 11.9 mg Total Dose
1.20 mLs Volume — IM Rte — SID Freq — 2 Days
Start 01-22-2020 End 01-23-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Cefazolin 330 mg/mL
25.00 mg/kg Dose — 398 mg Total Dose
1.20 mLs Volume — IM Rte — BID Freq — 7 Days
Start 01-21-2020 End 01-27-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Boost
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 1 Days
Start 01-21-2020 End 01-21-2020
1-31 am only

Prunes
Dose — Total Dose
Volume — PO Rte — SID Freq — 4 Days
Start 01-21-2020 End 01-24-2020

Fruit + Veggies
Dose — Total Dose
Volume — PO Rte — SID Freq — 7 Days
Start 01-21-2020 End 01-27-2020

Rice Cereal
Dose — Total Dose
Volume — PO Rte — SID Freq — 6 Days
Start 01-21-2020 End 01-26-2020
Dose Ovrd

Kool-Aid
1.00 bottle(.5L)/anim Dose — 1. Bottle(.5L) Total Dose
1.00 Bottle(.5L) Volume — PO Rte — SID Freq — 3 Days
Start 01-21-2020 End 01-23-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Boost Soaked Chow
Dose — Total Dose
Volume — PO Rte — SID Freq — 4 Days
Start 01-21-2020 End 01-24-2020

MMU [redacted] M
8yrs 11mos 15.90kg NRL03

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .5 mg Total Dose
1.60 mLs Volume — IM Rte — SID Freq — 1 Days
Start 01-21-2020 End 01-21-2020

[redacted] 3/30/20

2011 G = Good, F = Fair, P= Poor
...tions: Ketamine 100mg/ml; Dexmedetomidine 0.5mg/ml, Alfaxalone 5.0 mg/ml, Diazepam 5.0mg/ml

23-01594_000715

UCD 0678

Animal ID# [redacted]

California National Primate Research Center

Page # 18 ~~68~~ ①

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
					Animal Ate All offered treats, Active - NEPD	
					A: poor app in Am P: ctm on MH.	[redacted]
11-27-19	15.6					
11/29/19		P/G	G	N	SO: BAR (P), Re: Poor App (10 chow).	
					Ate 200 calories of produce per SRA.	
					did not eat chow. Ate treats.	
					A: Poor App for chow 2nd recent	
					report good for supps	
					P: CTM on Chow log and MH	
					200 calories given daily during	
					week per SRA (not on wkends	[redacted]
12/7/19		G	G	N	SO: BAR (P) Re: BAR (L) Foot Toe Trauma;	
					minor abrasion dorsum aspect of LFD2	
					proximal to toenail. ∅ bleeding	
					or swelling. NEPD	
					A: minor trauma LFD2	
					P: ∅ Tx indicated. CTM on MH	[redacted]
12/13/19	15.8					
① 11-14-19		P/F	G	CL	SO BAR (P) RE: Poor App & chow: Animal Ate	
					supplements and training treats from NRL staff.	
					Active with NEPD. A: poor → fair App.	
					P: ctm on M.H.	[redacted]
12/25/19		G	G	N	SO: BAR RE: poor app; actively eating chow,	
					3 partners remain post A.M. feeding.	
					Readily ate treats. NEPD	
					A: 1st recent report for poor app	
					P: CTM on MH	[redacted]

① page incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted] **California National Primate Research Center** Page # 17 (1)

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
9/3/19	MMU [redacted] 1.5 MLS KET / D->1302 W/O 2742 SPF01					
	WT: 1.499 CAGE TIME: 2:25 15MIN 2 30MIN 3 45MINS ___ 1HR ___ 1.25HR ___ 1.5HR ___ 2HR ___					[redacted]
9/4/19		?	G	CC	SO: BAR (P) RE: poor app, (R) eye red; very mild periocular swelling upper lid of OD, w/ mild erythema & ocular discharge, or blepharospasm. NEPD, not attentive to area. & chow left in cage. Readily ate treats. A: poor app, suspect 2° to recent sedation. Mild (R) eye erythema. P: No Tx indicated @ this time. CTM on MH.	[redacted]
9/20/19	15.01				Box weight	[redacted]
9/28/19		?	G	N	SO: BAR (P) RE: poor app; no chow left in cage, chow log states none consumed out of 9. Readily ate treats, NEPD A: 1st recent poor app report P: CTM on MH	[redacted]
9-30-19		G	G	N	SO BAR RE: poor app (chow): Animal ate 7/7 chow today plus training treats. Normal amount of stool in cage. Animal active with NEPD. A: Good appetite. P: CTM on MH.	[redacted]
10/4/19	14.98					[redacted]
10/18/19	15.26					[redacted]
11/5/19					MMU [redacted] moved to [redacted] move # 19-780	[redacted]
11/14/19	15.0					[redacted]
11-25-19		P	G	CC	SO BAR: RE: poor app & stool. Ate 0/7 chow. Animal fed heavy on pm 11-24-19 per tech.	

(1) pages incorrectly numbered [redacted] 3/20/20

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PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# MMU [redacted] **California National Primate Research Center** Page # 1 of 16

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
7/20/19		?	G	N	SO: BAR (P) RE: poor app; Food log states 11	
					chow left in cage. Rendiry ate treats,	
					NEPD. ⊘ chow currently in cage	
					A: 2nd recent report for poor app	
					P: CTM on MH. Consider supps if poor	
					app persists	[redacted]
7/26/19	14.57					
8/7/19					MM.d to [redacted] move # 19-532	
8/9/19	14.40					
8/16/19	14.60				MM.d to [redacted]	
8/17/19		?	G	CC	SO: BAR RE: Poor app, Face trauma;	
					minor abrasion lateral to (R) eye. ⊘	
					swelling or erythema. NEPD. ⊘ chow	
					in cage, Rendiry ate treats	
					A: minor facial trauma, 1st report for	
					poor app, suspect 2° to rec. move	
					P: CTM on MH	[redacted]
8/23/19	14.41					
9/3/19						
	14.99				SOZ: RRU - BCS 3.0, Tartar 1.0 - scaled	
					and polished. Mild patchy alopecia both	
					legs.	[redacted]

Cardiologist guided echocardiogram performed due to: pre-shipment / pre-project / clinical / genetic
Blood pressure and heart rate readings obtained
Preliminary results: Normal / Suspect (await final results)
Comment: _____ Final Echo Result: **LVH Negative** - [redacted]

[redacted] 10/30/20 Recording error ~~[illegible]~~ ~~[illegible]~~ pgs incorrectly numbered [redacted] 3/30/20

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# MMU[redacted]

California National Primate Research Center

Page # ~~15~~ 15 ②

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
4/2/19		?	G	?	SO: BAR (P) Re: Poor app UNABLE TO CONFIRM	
					poor app DUE TO RECENT CAGE CLEANING, CHOW WAS	
					PULLED. ANIMAL APPEARS BRIGHT & ACTIVE.	
					A: SUSPECT PAIR MATE IS SOURCE OF POOR APP.	
					P: WEIGHT CHECK ~~ON 4/8/19~~ ① REQUESTED FOR	
					THE WEEK OF 4/8/19, WILL REASSESS.	[redacted]
4/5/19	14.12					[redacted]
4/11/19		P	G	N	SO: BAR (P) Re: Poor APPETITE; PER HUSBANDRY,	
					9 BISCUITS LEFT IN CAGE. ANIMAL IS	
					BRIGHT & ACTIVE.	
					A: 1ST POOR APPETITE IN ONE WEEK. RECENT	
					WEIGHT CHECK SHOWS INCREASE IN WEIGHT.	
					P: NO TX REQUIRED AT THIS TIME, CTM	
					ON ROUTINE MH	[redacted]
5/3/19	13.78					[redacted]
5/17/19	14.49					[redacted]
5/31/19	14.39					[redacted]
6/2/19		?	G	N	SO: BAR, paired Re: poor app; chow already pulled, per	
					husbandry 7 chow remain, readily took treats A: 1st	
					recent report for poor app P: CTM on routine MH	[redacted]
6/14/19	14.21					[redacted]
6/28/19	14.48					[redacted]
7/12/19	14.41					[redacted]
7/16/19		P	G	N	SO: BAR , Re: Poor appetite. Ate 2 chow and did/did not eat forage, did/did not eat fresh fruit / treats.	
					A: Poor, Fair, Good appetite. 1st recent confirmed report.	
					P: CTM on MH / OP	[redacted]
						[redacted]

① EE DISREGARD 4/2/19 [redacted]

② Recording UNK. Suspect normal

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

23-01594_000719

UCD 0682

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/1/19		G	G	N	SO: BAR(P), RE: Vomit. Cage cleaned by NEPD. time of observation. A: Unable to confirm emesis. 2nd recent P: CTM on MH / OP.	
						[redacted]
3/13/19	14.06					
3/22/19	14.18					

PHYSICAL EXAM

Date 3/25/19 Weight 13.93 BCS 2.5

HR 144 RR 36 TEMP 99.4 ☐ Project Code ☐ Shave Tattoo

1. Integument WNL
2. Oral Cavity WNL
3. Eyes WNL 4. Ears WNL
5. Musculoskeletal mild musc. atrophy in legs
6. Thorax Auscultation WNL
7. Abdominal Palpation WNL
8. Spleen WNL 9. Liver WNL
10. Lymph Nodes WNL
11. Urogenital WNL
12. Rectal Palpation NG

Animal may be unpaired or individually housed while receiving veterinary care

SO: Received sedated
A: stable animal
P: CTM on routine exam

3/26/19 WT: 13.93					1.6 MLS KETMINE IM, BLED ____ MLS, ROOM ROUND UP, TB TEST LEFT EYE 24HR-✓ 48HR-✓ 72HR-✓ ANIMAL MONITORED UNTIL RECOVERED	[redacted]
3/26/19					SO: CBC (3/25) WNL, Chem 20 (3/25) WNL A/P see 3/25	[redacted]
3/28/19		P	G	N	SO: BAR(P) Re: Poor appetite. Ate ____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	NEPD, animal active in enclosure.
						[redacted]
3/29/19		P	G	N	SO: BAR(P) Re: Poor appetite. Ate ____ chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 2nd recent confirmed report. P: CTM on MH / OP	NEPD, animal active.
						[redacted]

RE [redacted] 3/30/19

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
10/20/18	cont				The room ~~was~~ ① had a normal Nova.	
					CTM on MH.	[redacted]
11/2/18	13.80					[redacted]
②					Animal #: [redacted] Room#: [redacted]	
10/12/18		G	G	N	SO: BAR, Re: Poor Appetite (chow). 3 partial chows in cage. Ate scratch and treats. NEPD.	
					A: Good appetite	
					P: CTM on MH	[redacted]
11/16/18	13.90					[redacted]
11/30/18	14.04					[redacted]
12/14/18	14.18					[redacted]
12/28/18	14.30					[redacted]
1/2/19		P	G	U	SO: BAR, Re: Poor appetite. Ate 0 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. 1st recent confirmed report. P: CTM on MH / OP	
						[redacted]
1/11/19	14.38					[redacted]
1/25/19	14.52					[redacted]
2/8/19	14.78					[redacted]
2/14/19		G	G	N	SO: BAR Re: Vomit - no vomit seen at time of observation A: possible emesis P: CTM w/ routine MH	
						[redacted]
2/22/19	14.90					[redacted]

① RE [redacted] 10/20/19. ② Lost record entry added. 11/3/18 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
7/20/18		F	G	N	SO: BAR , Re: Poor appetite. Ate 1 chow and did/did not eat forage, did/did not eat fresh fruit/treats. A: Poor, Fair, Good appetite. ___ recent confirmed report. P: CTM on MH / OP — Suspect procedure on 7/20/18 may be reason for decreased appetite.	
7/27/18	13.20					[redacted]
8/10/18	13.52					
8/10/18	Cardiologist-guided echocardiogram performed due to: pre-shipment / pre-project / clinical. Preliminary Results: Normal / LVH / Suspect (await final results). Comments: __ Final Echo Result: ____ **LVH Negative**					[redacted]
8/10/18	MMU [redacted] 1.5 MLS KET IM, D→ 1302 SPF01 W.O. 2437 WT: 13.20 CAGE TIME 2:20 15MIN 2 30MIN 3 45MIN___ 1HR___ 1.25HR___ 1.5HR___ 1.75HR___ 2HR___					[redacted]
8/24/18 ~~13.36~~ ①	13.36					
9/7/18	13.60					
9/21/18	13.82					
9/28/18	13.77				[redacted] [redacted] **9/28/2018** 1.5 mls Ket. BCS= 3 Tartar: 0 (1) 2 3 4 Teeth Scaled (Y) N TB Test: (R) L Eye 24hr — 48hr — 72hr — patchy alopecia on both legs trimmed nails 1 ML ear MONITORED UNTIL RECOVERED	[redacted]
10/20/18		F	G	N	SO: BAR RE: lixit Not connected. Animal active in cage and accepting treats. A: Stable animal P: Reconnect lixit, since smallest animal in	

① Date should read "8/24/18". [redacted] 8/24/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
6/11/18		F	G	N	SO: BAR RE: Blood observed dripping from underside. No observed blood or wound noted on pump or digits. No blood observed in cage. A: stable animal, blood unconfirmed P: CTM on MH. ①	[redacted]
6/12/18		L	G	N	SO: BAR (P) RE: Nasal Discharge. No coughing or sneezing. Nasal discharge: (clear), cloudy, none. A: Confirmed / Unconfirmed. _____ report. P: CTM on MH / OPM	[redacted]
7/13/18	13.410					
7/20/18					CTSCAN NRL01	
7/20/18 MMU [redacted] LOC [redacted] 0.80 MLS KET IM (2) W.O. 2199 WT: CAGE TIME 11:10 15MIN / 30MIN / 45MIN X 1HR ✓ 1.25HR 2 1.5HR 3 1.75HR ___ 2HR ___						
7/21/18		P	G	CC	SO: BAR (C) Re: Poor appetite. Ate 0 chow and did/did not eat forage, did/did not eat fresh fruit / treats. A: Poor, Fair, Good appetite. ___ recent confirmed report. P: CTM on MH / OP + Re: Vomit. Clean cage, unable to confirm. A: Suspect decreased app. + possible (V) may be due to sedation 7/20	[redacted]
7/25/18	13.13				Loaded animal in Transport Truck. WO# 2244	[redacted]
					SO: Transported to SkyRA for MRI, project NRL02 WO# 2244. Sedated with ketamine 1.5 mls, (Animal was / was not placed in Steriotax, performed MRI per protocol, recovered fully, returned to CNPRC home cage Animal did/did not receive Ketoprofen IM	[redacted]
7-25-18					RETURNED TO HOME CAGE	[redacted]

① late entry, original entry written in wrong health jacket [redacted] 6/8/18

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
3/9/18	12.40					[redacted]
3/23/18	12.3					
4/3/18		P/F	G	N	SO: BAR (P) RE: Poor appetite. MMU in ex. pen, pair	
					mate was chair training @ time of observation.	
					Per feeding chart MMU ate well yesterday, no	
					(0) chow over night. Did eat fruit & veggies. Suspect	
					decrease in appetite may be due to treats given	
					during training. A: Poor app. for chow, fair app. for	
					fresh fruit, veggies & treats. P: CTM on MH.	[redacted]
4/6/18	12.19				1.2cc Ket; Bled 3cc SB; TB TEST (LEFT EYE) / RIGHT EYE 24HR __, 48HR __, 72HR __	[redacted]
					ANIMAL MONITORED	
					UNTIL RECOVERED	
4/7/18		P	G	N	SO: BAR RE: Poor App (no chow) Animal	
					would not go into cage to fully	
					assess appetite. Fasted for	
					RHU.	
					A: Poor Appetite, unable to	
					fully assess	
					P: CTM on MH	[redacted]
4/20/18	12.4					[redacted]
4-22-18		?	G	CC	SO: BAR (P) RE: Poor App — over 10; Unable	
					to Assess, Cage cleaned prior to observation.	
					NO chow in side cage animal in ex-cage.	
					A: Active, NCPD, Stable. P: CTM on MH	[redacted]
5/4/18	12.9					
5/18/18	12.9					
6/1/18	13.1					
6/6/18					move to [redacted] per move 18-330	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# 46136 **California National Primate Research Center** Page # 9

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ②	Stool (N, SS, L, B) ③	Observations	Initials
1/3/18		G	G	CC	SO: BAR Re: Poor appetite. MMH Ate 5 chow +	
					all forage. Readily ate apple + apricot pieces.	
					A: Good appetite. P: CTM on MH.	[redacted]
1/29/18		G	G	N	SO: BAR, Re: Poor App (7 chow) 2	
					chow in cage. Tech said animal	
					ate all pm chow. Animal also	
					getting lots of supps noted on log	
					per chair training. Very active.	
					Lots of normal stool throughout	
					cage. A: Good Appetite, NEPD	
					P: CTM on MH	[redacted]
2/9/18		P/G	G	N	SO: BAR Re: Poor App (0 chow) Animal	
					has 7 chow in cage. Adequate normal	
					stool chair training receiving lots of	
					treats. Ate: raisins, apples, apricots	
					grapes. Active. Suspect decreased	
					appetite due to treat intake.	
					A: Poor Appetite for chow (1st recent	
					report Good for treats	
					P: CTM on MH	[redacted]
2/18/18		?	G	CC	SO: BAR, paired Re: poor app; unable to assess	
					appetite due to recent cage cleaning, animal	
					is bright and interactive A: possible poor app,	
					recent move P: CTM	[redacted]
2/23/18	17.6				BOX Weight	[redacted]
3/2/18		G	G	N	SO: BAR (P) Re: Poor appetite. MMH ate 4 chow + fresh	
					fruit given by lab. MMH readily ate apple pieces. A: Good	
					appetite. P: CTM on MH.	[redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 8

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
12/21/17					A: Stable post sx P: CTM	
12/21/17					SO2: Gave single dose of ketoprofen	
					per DVM technician was concerned	
					about animal moving throughout cage	
					P: CTM on OPM	[redacted]
12/22/17		G	G	CC	SO: BAR OPM: Vasectomy + Re: PA. Ate 3 chow + ~~forage~~ ①	
					readily ate apple + banana pieces. Incisions	
					appear CDI w/ mild enthema noted. Noted mild	
					skin thickening @ incision sites. A: Fair - good appetite,	
					healing sx site. P: CTM on OP + MH.	[redacted]
12/23/17		F	G	N	SO: BAR, OPM: Vasectomy. Animal has	
					6 chow in cage, ate scitch and treats.	
					Adequate normal stool. Sts CDI w/scabbing	
					along incision line. A: Fair appetite	
					healing sx site P: CTM on OPM	[redacted]
12/24/17		F	G	N	SO: BAR OPM: Vasectomy. Incision CDI w/ scab. A: Healing	
					incision. P: Cont. vis ✓ till 12/27 then assess to D/C.	
					CTM on OP.	[redacted]
12/25/17		G	G	CC	SO: BAR OPM: Vasectomy. Incision CDI w/ scab. A: Healing	
					incision. P: CTM on OP.	[redacted]
12/26/17		G	G	N	SO: BAR. OPM: Vasectomy. Incision CDI w/o swelling or	
					exytheis. A: Healing vasectomy incision P: D/C for OPM +	
					MM on MH.	[redacted]
					⊘ D/C ⊘ Snomed	
1/2/18		G	G	CC	SO: BAR Re: Poor appetite. Ate 3 chow + all forage	
					Readily ate apple pieces + peanuts. A: Fair appetite.	
					P: CTM on MH.	[redacted]

① FE. Used incorrect word. 12/22/17 [redacted].

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Page # 7

Date	Weight (kg)	Appetite (G, F, P)	Hydration (G, F, P)	Stool (N, SS, L, B)	Observations	Initials
12/5/17					moved to EX [redacted]	[redacted]
12/18/17					moved → 7/10/16 02-2 per WO# 4118	[redacted]

12/18/17 MMU [redacted] 1.4 CC KETAMINE IM, D→SURGERY , NRL02 WO#4118

WT: 12.32

12/18/17

MMU [redacted] M
6yrs 10mos 13.10kg NRL02

Buprenorphine .3 mg/mL
0.03 mg/kg Dose — .39 mg Total Dose

1.30 mLs Volume — IM Rte — SID Freq — 1 Days
Start 12-18-2017 End 12-18-2017

MMU [redacted] M
6yrs 10mos 13.10kg NRL02

Ketoprofen 100 mg/mL
5.00 mg/kg Dose — 65.5 mg Total Dose

0.65 mLs Volume — IM Rte — SID Freq — 3 Days
Start 12-18-2017 End 12-20-2017

sx tech gave 12/18 dose

DATE: 12/18/17
SO: Animal was delivered sedated to [redacted] prep. Gave 0.3 ml Dexm/Atip IM. The caudal abdomen & inguinal area were clipped and surgically prepped. SP02 was monitored throughout the procedure. See procedure report for details.
A: Vasectomy
P: Visually check inguinal incisions daily via routine hospital morning health. Start RX monitored until fully alert.

12-19-17		F	G	CC	SO: BAR. OP: Post Vasectomy; Animal Active with NCPD. Sts are CDI (x2) with mild Swelling and bruising present at sx sites. Appetite fair – Ate 1/2 chow plus some fruit. A: Stable post sx P: CTM.	[redacted]
12/20/17		P	G	A	SO: BAR, Sts CDI w/ mild bruising. PS – Ø	[redacted]
		F/P	G	N	SO: BAR Re: Poor appetite. Ate 2 chow & readily Ate fresh fruit. A: Fair/poor app. for chow, fair appetite for fresh fruit. P: CTM on OP + MH.	[redacted]
12/21/17					moved → [redacted] per MOVE# 17-816	[redacted]
12/21/17		P/F	G	CC	SO: BAR. OPM. Vasectomy. Sts are CDI, w/ mild erythema, moving well in cage small amount of dried blood at incision.	

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

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Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
8-26-17					NO New trauma, Animal using (R) Hand WNL	
					A: (R) HD3 trauma healing 2° int.	
					P: Ctm.	[redacted]
8/27/17		G	G	N	SO: BAR OP: nail avulsion is clean and dry, healthy	
					pink tissue exposed, using finger normally A: LHD3	
					nail avulsion healing well P: CTM	[redacted]
8/28/17		1/4	G	CC	SO: BAR OPM LHD3 wound is clean, dry + contracting	
					NEPD, using hand normally A: 2nd int healing of LHD3 P3 (1)	
					partial avulsion of P3 P: CTM – assess to d/c after this wk	[redacted]
8/29/17		G	G	N	SO: BAR OPM LHD3 wound (1) continues to contract.	
					Remains clean + dry AP: [illegible] 8/29 [illegible]	[redacted]
Ø D/C Ø Snomed Ø n/a Recharge						[redacted]
8/30/17		P	G	N	SO: BAR RE: poor app & chow left in cage, ate some	
					enrichment A: 1st recent report for poor app P: CTM	[redacted]
9/6/17	12.47				Box wt.	[redacted]
9-28-17	12.27				[redacted] [redacted] 9/28/2017	
					12 mls Ket. BCS= 2.5 Tartar: 0 1 2 3 4 Teeth Scaled Y N	
					TB Test: (R) L Eye 24hr — 48hr — 72hr —	
					ANIMAL MONITORED	[redacted]
					UNTIL RECOVERED	
					moved → [redacted] mv # 17-613	
9-29-17		P	G	CC	SO: BAR- RE: Poor app - chow, A: Confirmed -	
					Suspect Poor app due to sedation on 9-28-17	
					P: CTM.	[redacted]
11/29/17	13.10				Box WT	[redacted]

(1) CE 8/28/17 [redacted] (2) CE 8/29/17 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ①	Observations	Initials
① 9-7-17	10.20				~~Box~~ Box Weights	[redacted]
9-22-17					Animal Moved to [redacted] Move # 17-598	[redacted]
9/29/17		G	G	N	S: BAR, paind. LTOP M. Resistant E. coli - Overall stable,	
					healthy animal. Q clinical concerns @ this time.	
					A- E. coli abx resistant - stable	
					P- CTM on LTOP Monthly. Await culture results	
					See 8/31	[redacted]
10/13/17	9.98				Box Wt.	[redacted]
10/16/17					→ [redacted]	[redacted]
10-23-17					moved → [redacted] mv II	[redacted]
10-31-17		G	G	N	S: BAR. P: LTOP: E. coli - Clinically appears	
					stable cageside. Animal was not	
					re-cultured as she is scheduled for	
					terminal project. A: Apparently stable -	
					P: CTM on LTOP until SIP scheduled	[redacted]
12/11/17					Collected vaginal swabs per WO# 4D95.	[redacted]
11/28/17		G	G	N	MMU [redacted]	
					S/O: LTOP (Resistant E. coli infection). BAR. Hx of	
					multi-drug-resistant vaginal E. coli. No clinical signs.	
					Recent culture results are unavailable.	
					A: Chronic E. coli infection.	
					P: Contact SRA for update on culture status. Continue to	
					house away from rest of colony to minimize exposure.	
					CTM monthly on LTOP.	[redacted]

① VOID Should read Box weights, tech error. 9-7-17 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Animal ID# [redacted]

California National Primate Research Center

Date	Weight (kg)	Appetite (G, F, P) ①	Hydration (G, F, P) ①	Stool (N, SS, L, B) ②	Observations	Initials
6/16/17		G	G	N	SO: BAR OPM: E. coli, resistant A: Stable animal, colonized with resistant e. coli strain, on PBS P: D/C to LTOP, check AHS 1x/mo, recheck culture in August.	[redacted]
					[redacted] D/C Recharge 4/24 - 6/16	
6/30/17					Collected Vaginal swab for Ecoli Sensitivity.	[redacted]
6.30.17						
~~6/29/17~~ ①					MMU [redacted] 0.9 MLS KET IM, SLED 3 MLS, W.O.# 2027 CRX01 WT: 9.32 BCS 3.5 CAGE TIME 1140 15MIN 3 30MIN___45MIN___1HR___1.25HR___1.5HR___1.75HR___2HR___	[redacted]
6/30/17					✓ pre-project physical __pre-shipment physical __weaning physical See associated P.E. sheet for additional information.	[redacted]
7/14/17					Cardiologist guided echocardiogram performed due to: shipment / project / clinical Preliminary Results: abnormal Final report pending Final Echo Result: **LVH Negative**	[redacted]
7/14/17					MMU [redacted] 1.0 MLS KET IM W.O.# 2204 SPF01 WT: 9.22 CAGE TIME 310 15MIN 3 30MIN___45MIN___1HR___1.25HR___1.5HR___1.75HR___2HR___	
7-25-17					moved → [redacted] # 17-474	
8/31/17		G	G	N	SO: LTOP (E. coli inf). BAR. Very active in cage. NEPD. A: Hx of multi-drug resistant E. coli infection following project inoculation. Recheck culture was scheduled for August. Results not yet available. P: CTM monthly on LTOP. Continue to house separately from rest of colony. Await culture results..	[redacted]

DEE - WRONG DATE. SHOULD READ 6-30-17 [redacted]

Obs Form 12-16-2011 G = Good, F = Fair, P= Poor, N= Normal, SS= Semi Solid, L=Liquid, B= Bloody

PC10 Standard Drug concentrations: Ketamine 100mg/ml; Dexmedetomidine 0.50mg/ml; Atipamezole 5.0 mg/ml; Diazepam 5.0mg/ml

Exhibit F

Final Necropsy Report, Report ID 65860, “Animal 21”

(21)

CNPRC Web Vitals Search Vacant Animal On Date Submit

Home | Animal Selection | MH Files | Exit

Animal Summary | Assignment | BB Assessment | Conception | Enrichment | Diarrhea | Fostering | Immunization

Morning Health | Housing Condition | Pedigree | Project | Relocation | Reproductive | Serum Bank | Snomed | Virology | Weight TB

Report ID: 65860 **Final Necropsy Report** **Timestamp: Sep 29, 2021 02:50 PM**

Animal ID	[redacted]	**Sex**	F	**Death Date**	09/13/2018
Location		**Age (yr:mon:day)**	1 : 7 : 12	**Death Type**	X
Investigator		**Project**	NRL02	**Charge ID**	BZ59
Pathologist		**Clinician**		**Work Performed**	2018-09-13
Weight (grams)	7220	**Pathology Condition**	1.5	**Hydration**	3

Gross Observations

Organ	Text
BODY AS A WHOLE	IFS is 1.5/5. There is approximately 10mL of pale yellow, clear fluid within the pericardial sac. The heart appears mildly enlarged and weighs 42.07g (0.58% body weight, within normal limits). The lungs appear within normal limits. Approximately 3cm of the distal esophagus extending into the gastric cardia has linear, parallel mucosal ulcers. The underlying esophageal submucosa is expanded 1-2mm by edema. The stomach contains a large amount of brown-black flecked liquid. The small intestines are mostly empty with small amounts of green mucoid fluid. The mucosa is normal although the serosal surfaces are dark red and congested. The cecum and proximal colon contain small amounts of firm, dark brown feces, and the remaining colon is empty. All large intestinal mucosal surfaces are normal. The capsular surface of the left kidney has two areas (one 1x2cm and one 0.5x0.5cm) that are irregular with a pale tan outline and red centers. On section, the discoloration extends through the cortex to the medulla, and affects ~75% of the cranial pole. The right kidney has two pinpoint tan areas on the capsular surface that correspond to linear tan streaks through the cortex. At the level of L2-L3, the dorsal extradural space of the spinal cord has a 0.5cm blood clot. The adjacent spinal cord appears normal.
BRAIN	Brain extraction, 9-14-18: Total brain weight including C1-C3 spinal cord: 126.479g (1.75% body weight). On the right dorsal cerebral surface, there is a very thin layer of firm, brown material (bioglue) extending ~1.5cm laterally and caudal to the implant. There is no associated hemorrhage. On the left cerebral surface, there is a 2-2.5mm thick area of "bioglue" subdurally that extends from the implant laterally 2-3cm and caudally ~4cm and is surrounded by hemorrhage. The underlying cerebral cortex is depressed with thinning of the grey matter, and there is compression of the lateral ventricle. The left temporal, parietal and occipital lobes are swollen (loss of sulci and bulging gyri) and soft upon palpation. The left ventral calvarium has diffuse of subdural hemorrhage. The cerebellum is herniated through the foramen magnum approximately 4mm.

Gross Diagnosis

Seq	Organ	Text
1	BRAIN	LEFT CEREBRAL HEMISPHERE SWELLING
2	BRAIN	LEFT CEREBRAL HEMISPHERE HEMORRHAGE
3	BRAIN	CEREBELLUM HERNIATED TISSUE
4	ESOPHAGUS	ESOPHAGUS ULCERATION
5	STOMACH	GASTRIC CONTENTS COLOR, ABNORMAL
6	KIDNEY	BOTH KIDNEYS INFARCT, ACUTE
7	HEART	PERICARDIAL CAVITY EFFUSION, SEROSANGUINOUS

Gross Comments

The primary lesion in this animal are changes within the brain, predominantly the left cerebral hemisphere. Bioglue is covering and compressing a large area of the left cerebrum, and there is subdural hemorrhage, swelling of the adjacent lobes (likely due to edema) and herniation of the cerebellum. This animal also has mild pericardial effusion, acute renal infarcts, and distal esophageal acute ulceration with melena in the stomach. The cause of the melena may be the acute esophageal ulcers, which is likely due to vomiting. The cause of the renal infarcts and pericardial effusion is not directly evident. The extradural blood clot in the lumber spinal column may be due to the perfusion process or may be the cause of the hindlimb clinical signs. The heart and lungs appear to be within normal limits. Histopathology to follow.

Final Observations

Organ	Text
ADRENAL GLAND	Slide 6: There are small amounts of mineral at the corticomedullary junction.
BONE MARROW	Right femur (slides 15 and NRL 15): WNL
BRAIN	Left cerebrum, 10x4mm section (slide 1): Expanding the subdural space and adhered to the arachnoid mater is a thick band of brightly eosinophilic material (bioglue) that is infiltrated superficially by small numbers of degenerate neutrophils and overlain by fibrin and mild hemorrhage. Some neutrophils and microglia contain small amounts of hemosiderin. The underlying superficial cerebral grey matter has large numbers of degenerate and shrunken neurons (Fluoro-Jade +) within a laminar pattern. Those neurons are hypereosinophilic with pyknotic or karyorrhectic nuclei (neuronal necrosis). The adjacent neuropil is diffusely mildly vacuolated with widening of the Virchow-Robbins spaces surrounding small vessels. The white matter has rare swollen axons. Right cerebrum, 12x4mm section (slide 2): Similar but a smaller amount of bioglue is within the subdural space, adhered to the arachnoid mater, and infiltrated by small numbers of neutrophils. The pia mater and subarachnoid space have small areas of hemorrhage with macrophages containing erythrocytes. The superficial cerebral grey matter has small numbers of degenerate and necrotic neurons as described above (Fluor-Jade +) admixed with mild edema. Focally within the grey matter is a small area of moderate edema and the white matter is diffusely mild edematous. Within the area that is not associated with superficial bioglue, the neurons and neuropil are within normal limits. Additional sections: Left frontal lobe (slide 16), left internal capsule/hippocampus/hypothalamus (slides 18 and 20), left occipital (slide 22); right frontal lobe (slide 17), right internal capsule/hippocampus/hypothalamus (slides 19 and 21), right occipital lobe (slide 23); cerebellum (slides 16-17): Normal. No Fluoro-Jade positivity. Dura mater (slide 1): There are segmental areas of mild to moderate hemorrhage with small numbers of neutrophils and macrophages containing hemosiderin.
CECUM	Slide NRL 14: Within the lumen are small amounts of cellular debris admixed with mucus. There is a mild increased in lymphocytes and plasma cells within the mucosal lamina propria, also forming a layer 2-3 cells thick deep to the glands.
COLON	

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Organ	Text
	Slide NRL 14: Within the lumen are small amounts of cellular debris admixed with mucus. There is a mild increased in lymphocytes and plasma cells within the mucosal lamina propria, also forming a layer 2-3 cells thick deep to the glands.
DUODENUM	Slide NRL 12: WNL
ESOPHAGUS	Slide 14, NRL 10: Multifocally the mucosa is thinned to absent (erosions and ulcers) and there are small amounts of fibrin and small to moderate numbers neutrophils in these areas. The submucosa has small areas of hemorrhage and marked edema that extends into the tunica muscularis.
EYE	Slides EYE 1-2: WNL
HEART	Left ventricle (slides 13, NRL 9), right ventricle (slides 13, NRL8): Multifocally throughout the left and right ventricles, approximately 30-50% of the cardiomyocytes are acutely degenerate with fragmentation, loss of cross striations and karyolysis. There are small bands of perivascular edema and mild fibrin accumulation. Rarely, there are small numbers of macrophages or neutrophils. Masson trichrome: There is no evidence of fibrosis within the myocardium.
ILEUM	Slide NRL 14: WNL
JEJUNUM	Slide NRL 13: WNL
KIDNEY	Left (slide 5, NRL1): The segmental artery of the cranial pole is occluded by a large layered thrombus of erythrocytes, fibrin and few leukocytes, which is multifocally adherent to the endothelium. There is minimal reactive inflammation (acute). The adjacent renal parenchyma has nearly diffuse coagulative necrosis with few remnant tubules and glomeruli only near large vessels. Surrounding the necrosis is a band of hemorrhage admixed with moderate numbers of neutrophils. The remaining parenchyma has scattered tubular degeneration and necrosis. Right (slide 6, NRL1): WNL
LIVER & DRAINED GB	Slides 7 and NRL2: The centrilobular hepatocytes have mild cytoplasmic vacuolation (glycogen). The gall bladder is WNL
LUNG	Slides 11-12, NRL 6-7: Multifocally throughout the parenchyma, alveoli are filled with large amounts of hemorrhage and small to moderate clusters of neutrophils and scattered macrophages with phagocytosed erythrocytes. In areas with less hemorrhage, alveoli are widened by edema and fibrin with fibrin lining the alveolar walls (hyaline membranes). Multifocally, vascular tunica adventitia are expanded by mild to moderate edema. No thrombi observed with H&E. Prussian blue: No hemosiderin is identified within the sections of lung. PTAH: Fibrin exudation and hyaline membranes are highlighted within the alveoli. Alveolar macrophages contain small amounts of cytoplasmic fibrin. No fibrin thrombi identified.
LYMPH NODES	Right inguinal (slide 8): WNL
NERVE	Right sciatic (slide 9, NRL 4): WNL Right brachial plexus (slide 10): WNL
PANCREAS	Slide NRL 12: WNL
SKELETAL MUSCLE	Right quadriceps (slides 9-10, NRL 5): WNL
SPINAL CORD	Cervical, C5-C6 (slide 2): WNL Thoracic, T4-T6 (slide 3): WNL Lumbar, L1-L2 (slide 4): There are small areas of perivascular hemorrhage within the grey matter (longitudinal section).
SPLEEN	Slide 8, NRL3: WNL
STOMACH	Cardia (slide 14, NRL 11), fundus (slide 15, NRL11), pylorus (slide 15, NRL 11): The cardia is within normal limits. The fundus and pylorus have few lymphocytes and plasma cells within the superficial lamina propria. Within the lumen of the fundus and pylorus are small numbers of Sarcina-like organisms.

Final Diagnosis

Seq	Organ	Text
1	BRAIN	CEREBRAL CORTEX NECROSIS
2	HEART	MYOCARDIUM NECROSIS
3	LUNG	PULMONARY ALVEOLI INFLAMMATION, ACUTE NECROTIZING
4	KIDNEY	BOTH KIDNEYS ACUTE ISCHEMIC NEPHROPATHY (T-71000)
5	ESOPHAGUS	ESOPHAGUS INFLAMMATION, ACUTE ULCERATIVE
6	STOMACH	STOMACH INFLAMMATION, CHRONIC DIFFUSE GASTRITIS
7	GASTROINTESTINAL TRACT	COLON AND CECUM, CS INFLAMMATION, CHRONIC DIFFUSE TYPHLOCOLITIS

Final Comments

As the acute neuronal necrosis is limited to the areas of bioglue, two pathogeneses are possible. 1)The bioglue dispersion within the subdural space led to increased intracranial pressure, which led to vascular or neuronal compression and neuronal necrosis. 2) The bioglue was toxic to the adjacent tissues (as described in the contraindications and warning sections of the IFU). Secondarily, this animal also has acute myocardial necrosis, acute fibrinonecrotizing and hemorrhagic alveolitis and acute renal infarcts. The pathogenesis of these lesions most likely involves primary neuronal damage. Sections of the internal capsule and hypothalamus, including Fluoro-Jade staining to identify degenerate neurons, did not reveal any lesions. The erosive esophagitis is secondary to emesis. The colitis and gastritis are mild and chronic. These lesions are likely not clinically relevant as they are mild and commonly seen in our colony without clinical signs.

Measurements

Name	Value	Unit
Brain	126.479	g
Heart	42.07	g