

DRAFT NON-GLP REPORT: 11-5203-N1

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AKI Therapeutic Trials

Test Article

Sentinel-001AKI

Second Draft Report Date

3/24/2016

Final Report Date

05/08/2016

(45 Days after Draft)

Study Director

Christopher Parker, M.S., MBA

Sponsor

Sentien

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Medford, MA 02155

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STUDY SUMMARY

The purpose of the study was to study the efficacy and safety of the test article which was an extracorporeal support system containing mesenchymal stem cells (MSCs). The animals in the study underwent varying degrees of therapeutic intervention in order to test the ability of the test article to treat an acute kidney ischemic injury. A jugular catheter was implanted and the ischemic model was induced by performing a unilateral nephrectomy and the remaining kidney was clamped to obstruct the blood flow of the renal artery and vein for 90 minutes. All animals underwent the ischemic injury and the treatment groups were Group 1: baseline control of injury only, Group 2: injury with dialysis treatment with no MSCs and Group 3: injury with dialysis treatment of MSCs. Five of the animals included in Group 1 were performed under Toxikon project # 10-2996-N1. Clinical pathology including urinalysis was performed routinely during the study and histopathology of the kidney was performed. All data was reported to the Sponsor and the Sponsor is responsible for all conclusions.

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**STUDY DIRECTOR AND QUALITY ASSURANCE SIGNATURES
AND VERIFICATION DATES****SIGNATURES**

Signature Information	
Protocol Number	Not Applicable
Study Director	Christopher Parker, M.S., MBA
Study Supervisor	Allan Sleger, A.S., LAT
Company	Toxikon Corporation

VERIFICATION DATES

Verification Date(s)	
Test Article Receipt	11/2/2011
Additional Test Article Receipt	Provided each day of treatment
Project Log	11/2/2011
Study Completion	To Be Determined (TBD)

Quality Assurance

DateChristopher Parker, M.S., MBA
Study Director_____
Date

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1.0 PURPOSE

The purpose of the study was to study the efficacy and safety of the test article which was an extracorporeal support system containing mesenchymal stem cells (MSCs).

2.0 REFERENCES

The study was based upon the following references:

2.1 Sponsor specifications

2.2 ISO/IEC 17025, 2005, General Requirements for the Competence of Testing and Calibration Laboratories.

3.0 COMPLIANCE

The data and report generated from this Non-GLP protocol should not be used to support applications for research or marketing permits for products regulated by the FDA. Compliance to 21 CFR part 58 Good Laboratory Practice (GLP) is required for data/reports intended for regulatory submission to assure the quality and integrity of safety data. The Sponsor was responsible for informing the Test Facility and the Study Director if the data was for any regulatory submission purpose. It was the Sponsor's responsibility to request GLP compliance prior to study initiation. Although this study was Non-GLP, it was conducted according to the accredited Quality System in effect at Toxikon, including ISO/IEC 17025, 2005, General Requirements for the Competence of Testing and Calibration Laboratories.

4.0 IDENTIFICATION OF TEST AND CONTROL ARTICLES

The Sponsor supplied the following information on a Non-GLP Test Requisition Form or other correspondence, wherever applicable (excluding confidential or trade secret information).

4.1 Test Article:

Name	Sentinel-001AKI
CAS/Code Number	Not Supplied by Sponsor (N/S)
Lot/Batch Number	Sentinel-001AKI

4.2 Control Article (Sponsor Supplied):

Name	Blank-001AKI
Lot/Batch Number	Blank-001AKI

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5.0 IDENTIFICATION OF TEST SYSTEM

5.1 Animals Used in the Study:

Number and Species: 27 Purpose-bred Mongrels

Sex: male

Weight/Age Range: 23.6–35.3 kilograms / at least 12 months old
weighed to the nearest 10 g

Health Status: healthy, previously used in other experimental procedures

Animal Purchase: Antech Incorporated, Barnhart, MO

Animal Identification: ear tattoo

Acclimation: minimum 5 days, under same conditions as for the actual test

Animal Selection: selected from larger pool and examined to ensure lack of adverse clinical signs

5.2 Animal Care and Maintenance:

Animal Room Temperature: 68 ± 5 °F

Animal Room Relative Humidity: 30–70%

Air Exchanges per Hour: a minimum of 10 changes per hour

Lights: 12-hour light/dark cycle, full spectrum fluorescent lights

Housing: individually housed

Cages: concrete steel pens

Bedding: pine shavings, P.W.I. Industries, St-Hyacinthe, Quebec, Canada (contact)

Animal Rations: Teklad 8755 Dog Food, Harlan Laboratories, Madison, WI, *ad libitum*

Water: tap water, *ad libitum*

There were no known contaminants present in the feed, water, or bedding expected to interfere with the test data.

The laboratory and animal rooms were maintained as limited-access facilities.

6.0 JUSTIFICATION OF TEST SYSTEM AND ROUTE OF ADMINISTRATION

6.1 Justification of Test System:

Canines are an established model for vascular dialysis and the size and/or anatomy of the species is best or uniquely suited to the procedure. The vascular system of the mongrel hound canine provides a sufficient flow rate to enable dialysis to be performed using a clinical scale device prototype.

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6.2 Route of Administration:

The test article was used as a part of an extracorporeal dialysis infusion system connected to the animals via an implanted jugular catheter.

7.0 EXPERIMENTAL DESIGN AND DOSAGE**7.1 Preparation of Test and Control Articles:**

The test and control articles were supplied by the Sponsor on each day of dialysis. The Sponsor was responsible for all test and control article preparation.

7.2 Pre-Dose Procedure:

Prior to surgery, each animal was weighed, observed for routine clinical observations and then bled for hematology, clinical chemistry and coagulation analysis. Additionally, urine was collected from each animal for urinalysis.

On the first day of the study (Day 0) all animals underwent surgery in order to induce the ischemic injury model. Groups 2 and 3 were additionally implanted with a jugular catheter in order to enable dialysis on Day 1 of the study. The animals were pre-medicated with appropriate analgesics and acepromazine before being anesthetized with ketamine and diazepam. The animals subsequently received an endotracheal tube and were placed on 1-4% of isofluorane. Once prepared for surgery, one jugular vein exposed and an intravenous dialysis catheter was implanted and anchored to the animal using suture (Groups 2 and 3). The catheter was then flushed with heparinized saline. For all groups (1, 2 and 3), the left kidney was then removed by a nephrectomy and then the renal artery and vein of the remaining kidney were clamped for 90 minutes. Following surgery, the animals were appropriately closed and allowed to recover. As appropriate, animals were bled and urine collected for clinical pathology analysis following surgery.

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7.3 Dose Administration:

Animal assignments into treatment groups are as detailed in Table 1:

TABLE 1
Animal Assignment

Group #	Animal #	Study Date	Treatment Group	Cell Dose (in Million Cells)
Group 1	7X214*	5/3/2011	No Dialysis	
	6X214*	6/8/2011		
	2X95*	6/8/2011		
	3X224*	7/12/2011		
	A1221*	7/12/2011		
	21342	9/11/2012		
Group 2	1171	11/1/2011	Dialysis + Blank Device	N/A
	9X245	11/29/2011		
	1X323	12/13/2011		
	91117	12/13/2011		
	51177	2/28/2012		
	31252	3/20/2012		
	41267	4/24/2012		
	51150	5/15/2012		
	51174	6/5/2012		
	31290	6/19/2012		
Group 3	6179	11/1/2011	Dialysis + Cells	192
	2177	11/29/2011		139
	21136	2/28/2012		560
	31136	3/20/2012		560
	51267	4/24/2012		250
	11150	5/15/2012		560
	11154	6/5/2012		560
	61319	6/19/2012		250
	51322	9/11/2012		522
	4292	11/28/2012		540
	9292	11/28/2012		530

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

N/A = Not Applicable

Note: Test article cell load data was as provided by the Sponsor

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The animals in Group 1 were used as a baseline control and were not dosed with the test or control article.

On Day 1 of the study, the animals in Groups 2 and 3 underwent dialysis. Prior to and following dialysis, as appropriate, animals were bled and urine collected for clinical pathology analysis. On the day of dialysis, the Sponsor primed the dialysis system and randomly chose which animal was to be treated with either the test or control article as available. Each animal received a bolus of 4000 units of heparinized saline prior to dialysis and then were maintained on a continuous infusion of 51 mL/hour of 18.6 U/mL heparinized saline in order to prevent clotting within the dialysis system during treatment. The animals were maintained on dialysis for approximately 12 hours, unless otherwise affected by clinical or technical complications, after which they were returned to their cage.

7.4 Post-Dose Procedure:

Each animal was observed daily for clinical signs of toxicity. All observations were recorded. Observations included the following systems: skin and fur, eyes and mucous membranes, respiratory, circulatory, autonomic and central nervous system, somatomotor activity, and behavior pattern. Particular attention was directed to observations of tremors, convulsions, salivation, diarrhea, lethargy, sleep, and coma. Clinical observations made on an animal were not open ended nor had gaps during the course of study.

Animals were observed once daily for morbidity/mortality. Animals whose condition made it unlikely that they would survive until the next observation, based upon the criteria established by the Study Director in concert with the veterinary staff, were sacrificed immediately and necropsied. Animals which were found dead were necropsied as soon as possible if found to be appropriate by the study director and pathologist. If possible clinical pathology samples were collected prior to sacrifice.

The animals were maintained for a period of up to 7 days. Animals were bled and urine collected for clinical pathology analysis on each day of the study. If urine could not be collected due to insufficient volume or other reason, it was noted in the raw data.

Other than the therapeutics involved in surgery and dialysis, no other medications were provided to the animals unless they were required based upon veterinary treatment requirements. At the end of the observation period, the animals were weighed and sacrificed by an overdose of an injectable barbiturate.

At necropsy, the kidney in each animal was collected and photographed. One half of each kidney, cut longitudinally, was immediately placed in 10% neutral buffered formalin for histopathological analysis by staining with routine hematoxylin and eosin (H&E) and periodic acid-Schiff (PAS). The half of each kidney submitted for histopathology was serially sectioned (8 or 20 sections depending on the individual animal and discussions between the Sponsor and the pathologist) equally along the entire tissue. The serially sectioned kidney tissues were microscopically assessed for signs of inflammation and renal health. The other half of each kidney was sectioned, flash frozen and stored at -80 °C for Sponsor analysis.

8.0 EVALUATION CRITERIA

Control of Bias Statement:

This study and its design employed methodology to minimize uncertainty of measurement and control of bias for data collection and analysis, which included but was not limited to: control

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group, animals selected from a larger pool, baseline values for the studied parameters, quality control samples for performance monitoring, system suitability assessment, randomization, and method controls such as blanks and replicates.

9.0 RESULTS

A total of 5 animals from Toxikon project # 10-2996-N1 performed for the Sponsor are being reported as a part of the current study in Group 1 per Sponsor request (Animal #'s 7X214, 6X214, 2X95, 3X224 and A1121).

9.1 Clinical Observations (Attachment A):

A total of 7 animals were humanely sacrificed or found dead during the study, three in Group 1, three in Group 2 and one in Group 3. In Group 1, Animal # A1221 was humanely sacrificed on Day 3 and intussusception of the small intestine was observed. Animal # 6X214 was found dead on Day 6 and Animal # 3X224 was humanely sacrificed on Day 6 due to significant signs of lethargy and renal failure. In Group 2, Animal # 31290 was humanely sacrificed after it was observed to have potentially had a seizure during dialysis on Day 1. Animal # 41267 was humanely sacrificed on Day 4 due to significant vomiting and Animal # 51177 was humanely sacrificed on Day 6 due to lethargy and vomiting and was noted to have a swollen abdomen potentially related to the nephrectomy surgical procedure. In Group 3, Animal # 51267 was humanely sacrificed on Day 6 due to significant vomiting and lethargy. A significant loss of weight was also a contributor to the decision to humanely sacrifice a number of the above animals. The most common clinical observations across all groups included decreased food consumption, lethargy, diarrhea and vomiting. All of these clinical observations were not unforeseen considering the model that was induced.

9.2 Body Weight Changes (Table 2 and Attachment A):

All animals in the study decreased in weight. The weight loss corresponds to the observed clinical observations which were generally pervasive across all groups.

9.3 Clinical Pathology (Tables 3, 4, and 5, and Attachment A):

All clinical pathology data was collected and the Sponsor is responsible for the interpretation of the results.

9.4 Extent of Renal Injury (Table 6 and Attachment A):

The extent of renal injury at the time of dialysis was determined for Groups 2 and 3. This was considered as the increase in BUN and Creatinine values from each animal's pre-surgery baseline values to the pre-dialysis blood collection time point values.

9.5 Gross Pathology (Attachment A):

Primary gross findings were related to the condition of the kidney and were not unexpected due to the ischemic injury model. Two animals in Group 1 and one in Group 2 were noted to have inflamed/discolored small intestines. The level of visual discoloration and other damage to the kidney appeared to be relatively comparable across the groups.

9.6 Histopathology (Table 7 and Attachment B):

Each kidney was serially sectioned and each section was evaluated for signs of inflammation and general renal health.

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10.0 CONCLUSION

All data was collected and reported to the Sponsor and the Sponsor is responsible for drawing all conclusions.

11.0 RECORDS

11.1 Original raw data will be archived by Toxikon Corporation.

11.2 A copy of the final report and any report amendments will be archived by Toxikon Corporation.

11.3 The original final report will be forwarded to the Sponsor.

11.4 The test article was returned by Toxikon.

11.5 Test article retention upon study completion is the responsibility of the Sponsor.

12.0 CONFIDENTIALITY AGREEMENT

Per corporate policy, confidentiality shall be maintained in general, and in specific accordance with any relevant agreement specifically executed between Toxikon and the Sponsor.

13.0 ANIMAL WELFARE STATEMENT

The Sponsor assured that, to the best of their knowledge, this study did not unnecessarily duplicate previous testing and that there were no non-animal alternatives acceptable for the evaluation of the test article as defined by the protocol.

All evidence of pain and distress was reported to the Veterinarian and/or Study Director. All clinical observations correlated with the veterinary findings.

Toxikon strictly adhered to the following standards, where applicable, in maintaining the animal care and use program:

United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service, 9 CFR Ch. 1 (1/1/95 edition), Subchapter A-Animal Welfare.

“Guide for the Care and Use of Laboratory Animals,” National Research Council, 2011. (NIH).

Office for Laboratory Animal Welfare (OLAW), “Public Health Service Policy on Humane Care and Use of Laboratory Animals,” Health Research Extension Act of 1985 (Public Law 99-158 November 20, 1985), Reprinted 1996.

ISO 10993–2, 2006, Biological Evaluation of Medical Devices – Part 2: Animal Welfare Requirements.

Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC) International.

14.0 UNFORESEEN CIRCUMSTANCES

Any unforeseen circumstances were documented in the raw data. However, no unforeseen circumstances that affected the integrity of the study were noted.

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TABLE 2
Summary Body Weights

Group #	Group Averages	Day 0	Day 7
Group 1*	Mean	30.55	26.97
	SD	2.44	0.50
	N	6	3
Group 2**	Mean	28.66	25.03
	SD	2.98	1.23
	N	10	7
Group 3***	Mean	30.09	25.97
	SD	2.51	1.84
	N	11	10

*Animals A1221, 6X214 and 3X224 not included in Day 7 analyses due to early death or termination.

**Animals 31290, 41267 and 51177 not included in Day 7 analyses due to early termination.

***Animal 51267 not included in Day 7 analyses due to early termination.

Tables formatted for clarity

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TABLE 3
Summary Hematology Parameters

Day of Study	# of Animals Included in Analyses	Group 1																			
		WBC (K/ μ L)		RBC (M/ μ L)		Hgb (g/dL)		Hct (%)		Neut (%)		Lymph (%)		Mono (%)		Eos (%)		Baso (%)		Platelets (K/ μ L)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	6	12.0	3.5	5.91	0.49	13.6	0.9	40.9	2.9	78.1	7.6	13.7	4.2	7.4	3.5	0.02	0.01	0.82	0.63	184.33	85
Post-Surgery	6	9.2	1.6	5.35	0.78	12.3	1.7	36.9	5.0	82.7	6.5	6.1	1.2	9.4	4.7	0.19	0.38	1.62	1.00	184.00	39
Day 1	6	25.1	6.3	5.82	0.17	13.7	0.9	40.9	2.4	88.1	3.4	6.2	2.2	5.1	3.1	0.04	0.08	0.63	0.60	204.33	53
Day 2	6	23.6	7.4	5.77	0.23	13.6	0.9	39.7	2.0	85.8	4.1	6.6	2.7	7.0	4.2	0.08	0.14	0.44	0.40	171.33	26
Day 3	6	23.5	10.0	5.99	0.56	13.4	0.9	40.0	3.0	85.3	7.0	6.4	3.5	8.0	4.2	0.02	0.02	0.25	0.25	197.33	24
Day 4	5	19.6	7.3	5.92	0.62	13.6	1.3	39.1	3.5	80.3	5.3	8.0	4.4	10.5	1.5	0.03	0.02	1.18	0.60	188.33	36
Day 5	5	18.3	5.9	6.56	1.36	14.0	2.5	44.0	7.3	82.7	3.6	5.7	4.1	10.5	1.0	0.05	0.01	1.13	0.64	116.62	121
Day 6	4	20.2	7.4	6.63	1.63	13.5	1.3	43.4	10.1	85.4	11.7	6.2	4.7	7.4	6.6	0.02	0.02	1.03	1.18	119.10	81
Day 7	3	20.1	11.2	5.94	0.31	13.5	0.4	40.0	1.2	80.4	10.4	8.6	3.0	9.9	7.2	0.03	0.06	1.07	1.01	175.01	149

Animal A1221 not included in Days 4-6 analyses due to early termination.

Animal 6X214 not included in Days 6-7 analyses due to early death.

Animal 3X224 not included in Day 7 analyses due to early termination.

Day of Study	# of Animals Included in Analyses	Group 2																			
		WBC (K/ μ L)		RBC (M/ μ L)		Hgb (g/dL)		Hct (%)		Neut (%)		Lymph (%)		Mono (%)		Eos (%)		Baso (%)		Platelets (K/ μ L)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	10	9.8	3.0	6.67	0.56	15.4	1.2	46.0	3.7	72	8	19	6	8	3	0	1	0	0	231	108
Post-Surgery	10	9.4	2.8	5.1	0.57	11.7	1.3	34.9	4.0	82	8	10	4	7	4	0	0	1	1	220	69
Pre-Dialysis	10	22.5	6.7	5.65	0.78	13.0	1.8	39.0	5.4	87	8	6	4	6	5	0	0	0	0	211	57
Post-Dialysis	10	17.1	6.1	4.56	0.71	10.4	1.5	31.2	5.3	82	7	11	5	7	3	0	0	0	0	80	43
Day 2	9	21.7	5.9	5.17	0.87	11.7	1.9	34.9	5.8	83	9	8	5	8	5	0	0	0	0	107	34
Day 3	9	20.7	8.3	5.09	0.91	11.6	2.1	34.4	6.2	78	6	9	5	12	2	0	0	1	1	142	43
Day 4	9	17.7	5.1	5.21	1.04	12.0	2.2	34.5	6.8	75	6	10	4	12	1	0	0	2	2	165	74
Day 5	9	15.8	4.3	5.36	1.13	12.3	2.6	35.6	7.3	76	10	12	5	10	5	0	0	2	2	208	64
Day 6	8	15.7	6.6	5.22	1.34	11.9	3.1	35.4	9.2	79	9	9	4	11	7	0	0	1	1	203	98
Day 7	7	16.7	6.4	5.93	1.10	13.6	2.5	39.9	6.6	79	10	10	5	10	5	0	0	1	1	241	91

Animal 31290 not included in Days 3-7 analyses due to early termination.

Animal 41267 not included in Days 6-7 analyses due to early termination.

Animal 51177 not included in Day 7 analyses due to early termination.

Day of Study	# of Animals Included in Analyses	Group 3																			
		WBC (K/ μ L)		RBC (M/ μ L)		Hgb (g/dL)		Hct (%)		Neut (%)		Lymph (%)		Mono (%)		Eos (%)		Baso (%)		Platelets (K/ μ L)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	11	9.3	2.0	6.48	0.81	15.0	1.9	45.3	6.4	71.5	6.3	20	6	7	3	1	1	1	1	206	100
Post-Surgery	11	9.7	2.3	5.20	0.63	12.0	1.5	36.0	4.8	86.2	7.1	7	5</td								

TABLE 4
Summary Clinical Chemistry Parameters

Day of Study	# of Animals Included in Analyses	Group 1																	
		Na (mmol/L)		K (mmol/L)		Cl (mmol/L)		TG (mg/dL)		TP (g/dL)		TB (mg/dL)		PHOS (mg/dL)		GLU (mg/dL)		ALB (g/dL)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	6	145	2	4.5	0.25	109	3	36	8	5.6	0.4	0.0	0.1	5.5	1.4	76	12	3.5	0.2
Post-Surgery	6	138	12	6.9	1.44	106	11	15	12	4.6	0.6	0.1	0.1	10.2	1.9	104	27	2.9	0.3
Day 1	6	156	15	4.5	0.40	111	13	31	16	5.6	0.8	0.1	0.0	10.4	1.5	117	20	3.4	0.4
Day 2	6	150	13	4.8	0.56	105	15	40	21	5.6	0.9	0.1	0.0	12.1	2.1	123	20	3.2	0.4
Day 3	6	147	8	5.2	1.57	97	7	62	51	5.7	0.4	0.2	0.1	13.8	5.6	110	8	3.1	0.2
Day 4	5	144	10	4.7	1.14	94	9	38	17	5.8	0.6	0.1	0.1	13.3	5.6	108	15	3.1	0.2
Day 5	5	140	10	5.2	2.12	84	15	49	18	6.3	0.9	0.2	0.1	16.9	11.0	116	37	3.2	0.5
Day 6	4	139	6	4.6	1.53	88	20	60	32	6.4	1.2	0.2	0.2	14.9	12.1	134	73	3.1	0.4
Day 7	3	139	10	4.2	0.71	98	15	67	64	6.0	0.8	0.1	0.2	9.6	2.4	85	27	2.9	0.5

Day of Study	# of Animals Included in Analyses	Group 1																	
		GLOB (g/dL)		A/G		CREAT (mg/dL)		CHOL (mg/dL)		Ca (mg/dL)		ALK (U/L)		ALT (U/L)		AST (U/L)		BUN (mg/dL)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	6	2.1	0.5	2	0	0.8	0.1	161	16	10.8	0.2	59	21	37	8	37	5	17	3
Post-Surgery	6	1.7	0.5	2	1	1.5	0.2	125	14	9.3	1.2	49	9	37	13	40	9	21	4
Day 1	6	2.2	0.5	2	1	5.4	1.1	176	44	12.3	1.3	145	42	238	141	675	532	74	18
Day 2	6	2.4	0.6	1	1	8.0	2.7	194	51	12.2	1.3	120	38	205	97	169	96	106	24
Day 3	6	2.6	0.4	1	0	9.8	4.7	222	48	11.4	1.1	124	47	159	74	57	31	132	57
Day 4	5	2.7	0.6	1	0	10.1	6.4	232	43	13.0	4.1	103	32	111	49	34	8	133	73
Day 5	5	3.2	0.7	1	0	10.5	7.8	279	63	10.3	1.2	111	31	114	65	44	12	156	107
Day 6	4	3.3	0.9	1	1	8.2	7.0	312	121	10.5	2	132	60	86	47	46	19	136	107
Day 7	3	3.1	0.7	1	0	4.8	3.1	287	117	11.3	0.3	132	99	57	27	42	22	98	56

Animal A1221 not included in Days 4-6 analyses due to early termination.

Animal 6X214 not included in Days 6-7 analyses due to early death.

Animal 3X224 not included in Day 7 analyses due to early termination.

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TABLE 4
Summary Clinical Chemistry Parameters (Cont.)

Day of Study	# of Animals Included in Analyses	Group 2																	
		Na (mmol/L)		K (mmol/L)		Cl (mmol/L)		TG (mg/dL)		TP (g/dL)		TB (mg/dL)		PHOS (mg/dL)		GLU (mg/dL)		ALB (g/dL)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	10	148	11	4.98	0.39	111.5	9.2	37	14	6.1	0.8	0.1	0.1	6.1	1.2	79	12	3.69	0.21
Post-Surgery	10	153	24	6.46	1.36	118.8	21.0	15	13	4.7	1.0	0.0	0.0	10.7	1.9	125	35	2.89	0.39
Pre-Dialysis	10	161	27	4.88	0.93	116.2	22.7	28	9	5.4	1.2	0.1	0.0	8.8	1.8	104	38	3.24	0.42
Post-Dialysis	10	139	9	4.45	0.62	106.5	5.7	37	12	4.2	0.5	0.1	0.0	7.6	1.1	101	10	2.53	0.23
Day 2	10	159	34	5.23	1.78	118.2	29.9	85	125	5.6	1.5	0.1	0.0	11.6	3.6	119	28	3.17	0.62
Day 3	9	136	18	4.75	1.35	97.0	16.9	44	18	5.0	0.9	0.1	0.0	10.8	3.0	100	22	2.84	0.58
Day 4	9	142	14	5.17	1.15	94.7	13.9	51	32	5.3	0.8	0.1	0.0	12.0	3.6	106	14	2.87	0.43
Day 5	9	145	7	5.40	1.31	99.5	9.3	45	17	5.9	0.7	0.1	0.1	12.4	5.7	115	15	3.18	0.21
Day 6	8	143	5	5.28	1.51	95.6	10.8	56	36	5.8	0.5	0.1	0.0	13.6	8.0	104	12	3.05	0.29
Day 7	7	149	19	5.70	2.08	92.9	9.5	97	126	6.7	1.6	0.2	0.4	17.4	11.2	104	16	3.29	0.31

Day of Study	# of Animals Included in Analyses	Group 2																	
		GLOB (g/dL)		A/G		CREAT (mg/dL)		CHOL (mg/dL)		Ca (mg/dL)		ALK (U/L)		ALT (U/L)		AST (U/L)		BUN (mg/dL)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	10	2.4	0.7	2	0	0.75	0.17	176	35	11.4	1.2	135	169	40	13	28	4	17	4
Post-Surgery	10	1.8	0.6	2	0	1.48	0.36	132	28	10.5	2.3	101	117	40	18	46	18	24	6
Pre-Dialysis	10	2.2	0.8	2	0	4.46	1.27	167	26	12.0	2.5	154	62	111	97	180	103	64	15
Post-Dialysis	10	1.7	0.4	2	0	4.94	1.07	142	17	10.0	1.2	130	65	87	67	95	55	73	13
Day 2	10	2.4	0.9	2	1	7.25	2.99	194	34	12.3	3.7	146	77	107	83	63	30	102	31
Day 3	9	2.2	0.4	1	1	7.62	2.88	193	41	10.8	1.8	115	49	82	54	34	12	107	41
Day 4	9	2.4	0.5	1	0	8.81	3.99	213	52	11.1	1.4	107	40	73	48	27	11	144	70
Day 5	9	2.7	0.5	1	0	9.91	5.81	230	42	11.4	1.2	99	41	71	49	23	7	142	89
Day 6	8	2.8	0.5	1	0	10.80	7.63	282	102	10.4	1.7	111	43	64	41	33	15	166	122
Day 7	7	3.5	1.3	1	0	13.67	10.37	370	275	9.9	1.6	140	98	78	64	53	50	228	168

Animal 31290 not included in Days 3-7 analyses due to early termination.

Animal 41267 not included in Days 6-7 analyses due to early termination.

Animal 51177 not included in Day 7 analyses due to early termination.

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TABLE 4
Summary Clinical Chemistry Parameters (Con'd)

Day of Study	# of Animals Included in Analyses	Group 3																	
		Na (mmol/L)		K (mmol/L)		Cl (mmol/L)		TG (mg/dL)		TP (g/dL)		TB (mg/dL)		PHOS (mg/dL)		GLU (mg/dL)		ALB (g/dL)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	11	151	19	5.04	0.62	112.2	16.6	38	10	6.0	0.8	0.0	0.1	6.3	1.6	73	17	3.62	0.48
Post-Surgery	11	157	24	6.74	1.93	117.5	22.1	16	13	4.7	0.7	0.0	0.1	10.5	2.0	113	38	2.87	0.34
Pre-Dialysis	11	156	20	4.63	0.69	109.4	17.1	29	8	5.3	0.5	0.1	0.1	8.8	1.6	104	25	3.19	0.28
Post-Dialysis	11	144	10	4.57	0.87	108.2	7.2	39	9	4.6	0.4	0.1	0.0	8.8	2.1	113	14	2.69	0.28
Day 2	11	151	15	4.99	1.08	109.9	13.0	48	11	5.3	0.7	0.1	0.0	10.7	2.2	116	18	3.01	0.26
Day 3	11	146	11	4.88	1.54	102.1	9.1	53	17	5.6	0.3	0.1	0.1	11.6	2.9	113	19	3.09	0.34
Day 4	11	145	14	5.07	1.32	101.5	13.0	60	25	5.8	0.7	0.2	0.1	12.5	3.7	111	9	3.06	0.46
Day 5	11	146	19	5.37	2.20	99.7	13.0	64	24	6.1	0.6	0.2	0.1	13.9	7.4	108	16	3.09	0.41
Day 6**	11	140	5	4.32	1.56	95.4	7.0	77	37	6.1	0.2	0	0.3	11.8	5.4	107	10	2.98	0.36
Day 7	10	145	11	5.26	1.95	91.0	14.1	84	38	6.6	0.7	0	0.1	17.5	9.9	112	34	3.18	0.28

Day of Study	# of Animals Included in Analyses	Group 3																	
		GLOB (g/dL)		A/G		CREAT (mg/dL)		CHOL (mg/dL)		Ca (mg/dL)		ALK (U/L)		ALT (U/L)		AST (U/L)		BUN (mg/dL)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-Surgery	11	2.3	0.5	2	0	0.78	0.14	168	18	11.3	1.5	91	32	32	9	31	5	16	3
Post-Surgery	11	1.8	0.5	2	0	1.45	0.40	129	21	10.2	1.5	68	20	31	13	37	11	22	6
Pre-Dialysis	11	2.1	0.4	2	0	4.41	0.77	167	28	11.5	0.9	136	49	83	47	142	59	61	12
Post-Dialysis	11	1.9	0.3	1	1	5.24	1.28	154	25	10.8	1.0	107	36	75	46	126	101	75	18
Day 2	11	2.3	0.5	1	0	7.00	2.51	195	30	11.4	1.1	113	27	88	73	74	57	101	33
Day 3	11	2.5	0.3	1	0	8.48	3.63	233	44	11.3	1.0	112	35	71	41	36	13	119	55
Day 4	11	2.7	0.4	1	0	9.42	4.52	264	44	11.3	1.7	108	30	62	36	31	15	139	65
Day 5	11	3.0	0.4	1	0	11.27	6.95	304	55	11.1	1.2	111	34	57	41	33	17	163	106
Day 6**	11	3.1	0.4	1	0	8.82	6.29	338	108	10.8	1.1	120	59	46	28	44	38	142	84
Day 7	10	3.5	0.6	1	0	13.01	8.78	363	83	10.5	2.2	131	47	75	54	51	27	227	145

** Day 6 analyses includes daily and pre-sacrifice blood collections for animal #51267

Animal 51267 not included in Day 7 analyses due to early termination.

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TABLE 5
Summary Coagulation Parameters

Day of Study	# of Animals Included in Analyses	Group 1			
		PT		APTT	
		Mean	SD	Mean	SD
Pre-Surgery	6	6.85	0.31	12.5	1.1
Post-Surgery	6	7.05	0.62	12.6	2.3
Day 1	6	6.68	0.43	13.3	1.1
Day 2	6	6.45	0.30	12.2	2.9
Day 3	6	6.53	0.38	11.1	3.4
Day 4	5	6.30	0.30	11.4	2.1
Day 5	5	6.36	0.29	10.6	1.8
Day 6	4	6.45	0.42	12.0	1.4
Day 7	3	6.55	0.43	11.6	2.1

Animal A1221 not included in Days 4-6 analyses due to early termination.

Animal 6X214 not included in Days 6-7 analyses due to early death.

Animal 3X224 not included in Day 7 analyses due to early termination.

Day of Study	# of Animals Included in Analyses	Group 2			
		PT		APTT	
		Mean	SD	Mean	SD
Pre-Surgery	10	7.19	0.64	12.1	0.8
Post-Surgery	10	7.68	0.69	13.8	1.4
Pre-Dialysis	10	6.97	0.55	13.9	1.7
Post-Dialysis	10	6.96	0.73	19.2	4.6
Day 2	10	6.78	0.58	12.6	2.6
Day 3	9	6.60	0.61	10.0	1.9
Day 4	9	6.51	0.57	9.4	1.9
Day 5	9	6.53	0.51	9.3	1.5
Day 6	8	6.88	0.72	10.1	2.1
Day 7	7	6.68	0.86	10.7	2.0

Animal 31290 not included in Days 3-7 analyses due to early termination.

Animal 41267 not included in Days 6-7 analyses due to early termination.

Animal 51177 not included in Day 7 analyses due to early termination.

Day of Study	# of Animals Included in Analyses	Group 3			
		PT		APTT	
		Mean	SD	Mean	SD
Pre-Surgery	11	7.13	0.46	11.9	1.2
Post-Surgery	11	7.56	0.48	13.3	1.3
Pre-Dialysis	11	6.93	0.40	14.1	1.9
Post-Dialysis	11	6.74	0.39	16.6	2.0
Day 2	11	6.63	0.37	13.6	2.0
Day 3	11	6.63	0.38	11.2	2.0
Day 4	11	6.64	0.49	9.6	1.9
Day 5	11	6.53	0.43	10.4	1.2
Day 6**	11	6.59	0.39	10.8	1.8
Day 7	10	6.65	0.57	11.9	3.9

** Day 6 analyses includes daily and pre-sacrifice blood collections for animal #51267

Animal 51267 not included in Day 7 analyses due to early termination.

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TABLE 6
Summary Extent of Renal Damage Prior to Dialysis

		Group 2		
		Pre-Surgery	Pre-Dialysis	Fold Increase
CREAT (mg/dL)	Mean	0.75	4.46	5.95
	SD	0.18	1.28	
	N	10	10	
BUN (mg/dL)	Mean	16.6	63.8	3.84
	SD	4.25	15.40	
	N	10	10	

		Group 3		
		Pre-Surgery	Pre-Dialysis	Fold Increase
CREAT (mg/dL)	Mean	0.79	4.75	3.96
	SD	0.15	1.43	
	N	11	11	
BUN (mg/dL)	Mean	15.55	61.09	3.93
	SD	2.91	11.95	
	N	11	11	

Group 1 animals not included as dialysis was not performed.

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AKI Therapeutic Trials
DRAFT Toxikon Project #: 11-5203-N1
Test Article: Sentinel-001AKI

TABLE 7
Summary of Microscopic Histopathology Observations

Group #	Animal #	Histological Score											Total Score	
		Inflammation							Tubular					
		Eosinophils/ Neutrophils	Lymphocytes	Macrophages	Giant Cells	Necrosis/ Abscess	Congestion/ Hemorrhage	Fibrosis	Brush Border Loss/Necrosis	Cast Dep	Dilation	Mineralization	Degeneration	
Group 1	7x214*	5	0	6	0	0	0	0	1	20	17	4	20	3
	6x214*	0	0	0	0	0	0	0	54	20	0	2	100	4
	2x95*	20	0	35	0	0	0	0	60	60	20	0	60	9
	3x224*	0	16	11	0	9	0	0	37	36	38	39	37	12
	A1221*	0	5	0	0	1	0	0	80	78	27	36	72	16
	21342	28	19	8	0	N/A	0	14	24	12	18	32	31	16
	Mean	9	7	10	0	2	0	2	17	15	8	8	21	10
	SD	12	9	13	0	4	0	6	11	10	5	7	12	6
Group 2	1171	12	32	12	0	N/A	0	18	35	8	24	40	34	18
	9x245	4	21	8	0	N/A	0	2	8	8	12	8	8	6
	1x323	3	21	8	0	N/A	0	0	8	8	10	8	8	6
	91117	2	23	8	0	N/A	0	2	13	24	20	8	13	8
	51177	10	21	9	0	N/A	0	0	29	24	28	17	28	12
	31252	8	29	8	0	N/A	0	1	29	28	30	26	29	13
	41267	2	16	8	0	N/A	0	8	26	24	24	24	27	11
	51150	7	8	6	0	N/A	0	5	26	32	24	26	26	10
	51174	8	23	23	0	N/A	0	15	13	14	16	8	10	12
	31290	0	0	0	0	N/A	0	0	8	26	7	7	14	8
	Mean	6	19	9	0	N/A	0	5	20	20	20	17	20	10
	SD	4	9	6	0	N/A	0	7	10	9	8	11	10	4
Group 3	6179	1	21	8	0	N/A	0	8	25	12	26	28	17	10
	2177	15	24	8	0	N/A	0	1	8	8	7	2	8	8
	21136	8	24	8	0	N/A	0	0	8	8	8	10	7	7
	31136	10	23	7	1	N/A	0	0	14	12	22	8	14	9
	51267	4	19	8	0	N/A	0	9	27	22	38	28	28	12
	11150	20	9	13	0	N/A	0	16	37	40	24	24	39	17
	11154	12	8	6	0	N/A	0	4	14	10	8	20	16	8
	61319	8	8	0	0	N/A	0	8	32	24	8	36	8	12
	51322	6	16	4	0	N/A	0	9	17	22	26	10	11	8
	4292	5	16	0	0	N/A	0	22	24	24	18	24	14	11
	9292	0	15	7	0	N/A	0	8	16	10	22	12	10	7
	Mean	8	17	6	0	N/A	0	8	20	17	19	18	16	10
	SD	6	6	4	0	N/A	0	7	10	10	10	11	10	3

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

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**APPENDIX I
Software Systems**

Software	Use	Publisher/Vendor	Location
Adobe Acrobat 8, 9, and 10 Professional	Document preparation	Adobe Systems, Inc.	San José, CA
Lotus Domino Rel. 5.0	Client-server application for Sponsor, sample, test codes, and quotation management application databases	IBM Corporation	Armonk, NY
MS Office 2007 and/or 2010 Small Business Suite and MS Office 2013 Professional Suite	Business software (suite includes Word, Excel, PowerPoint, Outlook, Publisher, Office tools)	Microsoft Corporation	Redmond, WA
Rees CentronSQL System 2.0	Environmental monitoring and metrology system	Rees Scientific	Trenton, NJ
TMS Web 7	Document management for SOPs and training records management software system	Quality Systems Integrators	Eagle, PA

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AKI Therapeutic Trials

DRAFT Non-GLP Report: 11-5203-N1

Test Article: Sentinel-001AKI

ATTACHMENT A
Individual Animal Data

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Individual Clinical Observations
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Group 1								
Animal #	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7x214*	0	0	0	0	0	0	0	0
6x214*	0	0	0	0	D,V	D,V	***	
2x95*	0	0	0	0	D,V	D,V	D,V	D,V
3x224*	0	0	0	V	V	V	V**†	
A1221*	0	0	0	B**††				
21342	0	0	0	0	0	0	F	F,L

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

†Sacrificed due to significant lethargy and signs of renal failure

††Necropsy showed intussusception of the jejunum, possibly a surgical complication although exact cause could not be determined

0 = No Abnormal Observations

F = Decrease in food consumption

Grey - Not Applicable

B = Blood in Stool

L = Lethargy

**Animal was humanely sacrificed

D = Diarrhea

V = Vomiting

***Animal found dead

Group 2								
Animal #	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1171	0	0	0	0	L,V	L,V	L,V†	L,V†
9x245	0	0	0	0	0	0	0	0
1x323	0	0	0	0	0	0	0	0
91117	0	0	0	0	0	0	0	0
51177	0	0	0	0	L,V	L,V††	**	
31252	0	0	0	V	V	D,V	D	D
41267	0	0	F,V	D,V	V	F,V**		
51150	0	V	D,V	V	D,V	D,V	D,V	D,V
51174	0	V	D,V	D,V	D,V	D, L, V	D, L,V	D, L,V
31290	0	D,V,1***	D,L,V**					

+ Mild swelling and leakage from incision site

†† Incision site hard and swollen, penis swollen, possibly related to surgical procedure

0 = No Abnormal Observations

F = Decrease in food consumption

Grey - Not Applicable

1 = Seizure during dialysis

L = Lethargy

**Animal was humanely sacrificed

D = Diarrhea

V = Vomiting

***Bleeding from incision site

Group 3								
Animal #	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
6179	0	0	0	0	0	V	L,V	L,V
2177	0	0	0	0	0	0	L	L
21136	0	0	0	0	0	0	0	0
31136	0	0	0	0	V	V	D	D
51267	0	0	F†	V†	V†	F,V	F,L**	
11150	0	V	D,V	V	D,V	D,V	D,V	D,V
11154	0	V	D,V	D,V	D,V	D,F,L,V	D,F,L,V	D,F,L,V
61319	0	D	D	D,V	D,V	D,V	D,V	D,V
51322	0	0	0	0	0	0	F,L	F,L
4292	0	0	0	D,V	D,V	D,V	D,V	0
9292	0	0	0	D,V	D,V	D,V	D,V	0

+Swelling, inflammation at incision site, penis swollen. Incision site also draining.

0 = No Abnormal Observations

L = Lethargy

**Animal was humanely sacrificed

D = Diarrhea

V = Vomiting

Grey - Not Applicable

F = Decrease in food consumption

Tables formatted for clarity

Individual Body Weights and Body Weight Changes (kg)
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Group	Animal #	Day 0	Terminal	Change (kg)
Group 1	7X214*	30.3	27.5	-2.8
	6X214*	28.4	24.8	-3.6
	2X95*	29.7	26.5	-3.2
	3X224*	35.3	32.6	-2.7
	A1221*	34.2	32.5	-1.7
	21342	31.7	26.9	-4.8
Group 2	1171	25.8	23.9	-1.9
	9X245	23.6	23.0	-0.6
	1X323	28.2	24.6	-3.6
	91117	30.4	25.9	-4.5
	51177	27.6	24.6	-3.0
	31252	30.1	25.5	-4.6
	41267	24.1	22.1	-2.0
	51150	31.9	26.1	-5.8
	51174	30.6	26.2	-4.4
	31290	27.2	26.8	-0.4
Group 3	6179	26.5	24.7	-1.8
	2177	30.9	28.6	-2.3
	21136	27.8	25.0	-2.8
	31136	30.6	27.8	-2.9
	51267	29.9	25.3	-4.6
	11150	32.4	27.6	-4.8
	11154	30.3	25.1	-5.2
	61319	29.6	24.5	-5.1
	51322	27.1	23.1	-4.0
	4292	34.8	27.9	-6.9
	9292	30.9	25.4	-5.5

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

Tables formatted for clarity

Individual Hematology Parameters - Group 1
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 7X214 (Male)*										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
5/3/2011 Pre-Surgery	8.96	5.22	12.6	36.7	74.7	15.4	8.36	0.013	1.47	164
5/3/2011 Post-Surgery	7.83	4.31	10.4	30.4	93.4	5.73	0.872	0.00	0.00	144
5/4/2011	16.7	5.65	13.3	41.0	88.5	9.19	2.32	0.20	0.00	135
5/5/2011	15.5	5.49	12.9	40.0	83.8	10.2	5.63	0.060	0.281	149
5/6/2011	10.8	5.47	12.9	39.9	81.9	10.5	7.44	0.039	0.105	170
5/7/2011	12.6	5.21	12.5	36.3	78.6	10.5	9.19	0.00	1.65	161
5/8/2011	11.4	5.42	12.5	38.6	76.9	12.7	9.80	0.051	0.518	5
5/9/2011	12.0	5.07	12.1	34.6	73.0	12.8	12.3	0.039	1.90	197
5/10/2011	12.9	5.59	13.3	39.6	74.3	11.7	12.8	0.00	1.18	229
Mean	12.08	5.27	12.5	37.5	80.6	11.0	7.6	0.04	0.79	150
SD	2.83	0.41	0.9	3.4	7.0	2.7	4.1	0.06	0.76	62

Animal # 6X214 (Male)*										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
6/8/2011 Pre-Surgery	9.81	5.72	13.1	40.7	72.2	17.2	9.42	0.030	1.06	63.6
6/8/2011 Post-Surgery	11.1	4.94	11.4	34.5	84.0	5.53	8.60	0.039	1.84	221
6/9/2011	26.6	6.00	13.7	40.4	87.9	5.40	6.15	0.050	0.482	156
6/10/2011	18.1	5.90	13.5	39.2	81.3	9.04	9.18	0.00	0.475	182
6/11/2011	13.8	5.83	13.6	38.5	76.2	10.8	12.4	0.013	0.532	203
6/12/2011	11.3	5.79	13.5	38.0	77.4	8.90	11.9	0.026	1.74	211
6/13/2011	12.5	7.58	17.4	50.1	84.7	3.74	10.3	0.065	1.20	226
Mean	14.7	5.97	13.7	40.2	80.5	8.7	9.7	0.03	1.05	180
SD	5.9	0.79	1.8	4.8	5.5	4.5	2.1	0.02	0.58	57

Animal # 2X95 (Male)*										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
6/8/2011 Pre-Surgery	12.0	6.33	14.60	44.1	82.4	8.86	7.89	0.040	0.834	117
6/8/2011 Post-Surgery	8.05	6.19	14.30	42.7	85.2	5.00	8.37	0.040	1.40	159
6/9/2011	20.1	5.92	13.50	40.0	84.0	8.54	6.54	0.00	0.918	201
6/10/2011	26.2	6.00	13.80	40.0	85.3	6.31	7.60	0.010	0.765	147
6/11/2011	28.6	5.81	13.60	38.8	88.2	3.10	8.08	0.037	0.577	186
6/12/2011	27.8	6.31	14.40	41.5	85.0	4.58	8.94	0.037	1.44	215
6/13/2011	22.4	6.25	14.30	41.2	83.9	5.34	9.67	0.038	1.07	248
6/14/2011	19.8	6.38	14.6	42.4	78.4	5.98	13.5	0.00	2.19	250
6/15/2011	14.3	6.16	14.00	41.3	74.4	8.35	15.2	0.00	2.02	289
Mean	19.9	6.15	14.1	41.3	83.0	6.23	9.53	0.02	1.25	201
SD	7.2	0.20	0.4	1.6	4.2	1.99	2.90	0.02	0.56	55

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

Tables formatted for clarity

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes

RBC = red blood cell count

Neut = neutrophils

Eos = eosinophils

Hgb = hemoglobin

Lymph = Lymphocytes

Baso = basophils

SD = Standard Deviation

Individual Hematology Parameters - Group 1
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 3X224 (Male)*										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
7/12/2011 Pre-Surgery	8.78	6.37	14.5	43.2	74.1	16.6	7.84	0.027	1.44	278
7/12/2011 Post-Surgery	9.79	6.37	14.5	42.9	81.0	5.29	12.5	0.026	1.20	209
7/13/2011	23.1	^	15.3	44.6	94.2	5.52	0.241	0.013	0.00	244
7/14/2011	20.9	^	15.1	43.2	92.5	6.20	0.848	0.373	0.071	169
7/15/2011	21.2	6.98	^	45.1	84.3	6.25	9.15	0.013	0.267	207
7/16/2011	24.2	6.77	15.3	43.9	86.6	2.50	10.2	0.025	0.607	258
7/17/2011	24.3	8.33	^	53.3	81.6	4.09	12.2	0.039	2.16	301
7/18/2011	19.1	8.92	^	57.8	98.0	1.81	0.183	0.039	0.00	247
Mean	18.9	7.29	14.9	46.8	86.5	6.03	6.6	0.069	0.72	239
SD	6.2	1.08	0.4	5.6	7.9	4.58	5.4	0.123	0.80	42

Animal # A1221 (Male)*										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
7/12/2011 Pre-Surgery	15.3	5.50	12.9	38.2	91.7	7.80	0.516	0.013	0.00	196
7/12/2011 Post-Surgery	7.62	5.20	11.9	36.6	75.8	7.88	12.7	0.975	2.69	193
7/13/2011	31.5	^	13.8	42.0	86.4	4.46	7.60	0.00	1.58	184
7/14/2011	24.2	^	13.7	38.4	88.9	4.42	5.64	0.050	1.02	164
7/15/2011	29.7	6.26	14.7	41.3	97.0	2.79	0.234	0.00	0.00	177
Mean	21.7	5.65	13.4	39.3	88.0	5.47	5.34	0.21	1.06	183
SD	10.1	0.55	1.1	2.3	7.9	2.27	5.21	0.43	1.14	13

Animal # 21342 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
9/11/2012 Pre-Surgery	17.1	6.29	14.1	42.2	73.20	16.60	10.10	0.026	0.131	272.0
9/11/2012 Post-Surgery	11.0	5.11	11.5	34.3	76.50	7.36	13.50	0.065	2.610	249.0
9/12/2012 Pre-Dialysis	32.4	5.71	12.6	37.4	87.60	3.98	7.61	0.000	0.770	277.0
9/13/2012	36.5	5.67	12.4	37.5	83.20	3.25	13.30	0.000	0.010	218.0
9/14/2012	36.7	5.57	12.3	36.3	84.00	5.04	10.90	0.012	0.036	236.0
9/15/2012	21.9	5.53	12.2	35.8	74.10	13.30	12.10	0.038	0.459	189.0
9/16/2012	20.9	5.22	11.8	36.8	86.20	2.43	10.60	0.060	0.682	96.7
9/17/2012	30.0	6.13	13.9	38.7	92.30	4.22	3.45	0.020	0.010	76.0
9/18/2012	33.0	6.07	13.3	39.0	92.40	5.76	1.76	0.101	0.000	7.0
Mean	26.6	5.70	12.7	37.6	83.28	6.88	9.26	0.04	0.52	180.08
SD	9.2	0.40	0.9	2.3	7.28	4.86	4.19	0.03	0.84	96.80

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

^ Data not available

Tables formatted for clarity

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes

RBC = red blood cell count

Neut = neutrophils

Eos = eosinophils

Hgb = hemoglobin

Lymph = Lymphocytes

Baso = basophils

SD = Standard Deviation

Individual Hematology Parameters - Group 2
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 1171 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
11/1/2011 Pre-Surgery	7.85	6.22	14.20	42.1	85.3	13.4	1.23	0.014	0.00	364
11/1/2011 Post-Surgery	9.07	5.78	13.2	30.4	87.0	12.3	0.618	0.027	0.00	397
11/2/2011 Pre-Dialysis	31.9	6.67	14.8	46.4	97.5	2.27	0.160	0.049	0.00	355
11/2/2011 Post-Dialysis	29.8	4.42	9.93	29.4	95.1	4.00	0.852	0.049	0.00	152
11/3/2011	31.8	4.13	9.15	28.3	96.5	2.47	0.970	0.010	0.00	110
11/4/2011	28.1	4.09	9.24	28.1	80.7	5.48	12.9	0.209	0.712	139
11/5/2011	24.9	4.98	11.4	32.0	79.2	5.39	13.1	0.010	2.29	118
11/6/2011	22.5	5.73	13.0	36.3	96.1	3.53	0.361	0.00	0.00	142
11/7/2011	29.6	5.77	12.9	38.6	97.1	2.77	0.150	0.010	0.00	110
11/8/2011	29.6	5.77	12.9	38.6	97.1	2.77	0.150	0.010	0.00	110
Mean	24.5	5.36	12.1	35.0	91.2	5.4	3.0	0.04	0.30	200
SD	8.9	0.90	2.0	6.3	7.3	4.1	5.3	0.06	0.73	120

Animal # 9X245 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
11/29/2011 Pre-Surgery	8.27	7.04	16.0	49.9	78.0	15.8	6.16	0.061	0.010	16.0
11/29/2011 Post-Surgery	4.19	5.58	12.8	39.7	77.7	9.76	11.5	0.314	0.785	189
11/30/2011 Pre-Dialysis	16.1	6.47	14.8	44.9	86.7	3.74	8.76	0.052	0.735	184
11/30/2011 Post-Dialysis	12.1	5.40	12.2	36.2	79.5	10.2	9.87	0.00	0.393	57.2
12/1/2011	14.7	6.33	14.3	42.7	77.5	9.33	12.1	0.550	0.438	75.5
12/2/2011	12.0	6.48	14.7	42.8	76.5	8.68	14.6	0.050	0.121	52.7
12/3/2011	10.9	7.09	16.0	46.5	67.2	13.0	14.9	0.050	4.87	122
12/4/2011	11.0	6.95	15.9	45.2	67.6	15.4	13.7	0.054	3.38	190
12/5/2011	10.7	6.63	15.2	45.1	73.4	10.1	16.0	0.067	0.441	308
12/6/2011	14.0	6.64	15.2	44.4	72.8	9.47	17.4	0.052	0.236	322
Mean	11.4	6.46	14.7	43.7	75.7	10.5	12.5	0.13	1.14	152
SD	3.4	0.57	1.3	3.7	5.8	3.5	3.5	0.17	1.63	106

Animal # 1X323 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
12/13/2011 Pre-Surgery*	8.41	7.08	17.2	49.3	72.5	20.1	7.27	0.020	0.122	102
12/13/2011 Post-Surgery*	7.62	4.82	11.5	33.7	94.1	4.37	1.48	0.044	0.00	144
12/14/2011 Pre-Dialysis	17.4	5.99	14.3	42.8	86.4	4.17	8.75	0.00	0.653	184
12/14/2011 Post-Dialysis	13.6	4.39	10.2	30.3	85.0	7.29	7.49	0.090	0.140	98.9
12/15/2011	15.0	5.32	12.5	38.8	82.1	5.60	11.8	0.060	0.482	120
12/16/2011	13.9	5.76	14.2	41.4	77.3	6.65	14.5	0.00	1.53	202
12/17/2011	9.02	5.34	12.5	36.9	78.9	7.84	11.2	0.592	1.43	10.7
12/18/2011	14.9	5.99	14.1	41.1	78.0	7.08	11.5	0.078	3.43	188
12/19/2011	16.1	6.62	15.7	46.6	79.2	11.5	8.99	0.013	0.338	204
12/20/2011	11.2	5.58	13.1	39.2	86.9	6.93	6.03	0.030	0.100	149
Mean	12.7	5.69	13.5	40.0	82.0	8.2	8.9	0.09	0.82	140
SD	3.4	0.80	2.0	5.6	6.2	4.7	3.6	0.18	1.06	60

Animal # 91117 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
12/13/2011 Pre-Surgery	18.0	6.31	14.4	42.6	79.0	11.3	9.16	0.026	0.469	345
12/13/2011 Post-Surgery	9.31	5.09	11.4	34.2	76.2	12.1	9.62	0.026	2.15	253
12/14/2011 Pre-Dialysis	29.0	4.97	11.4	34.4	91.2	8.22	0.537	0.012	0.012	224
12/14/2011 Post-Dialysis	23.1	4.24	9.65	28.1	80.0	13.0	6.86	0.010	0.170	115
12/15/2011	28.2	5.01	11.4	35.0	94.4	5.34	0.252	0.010	0.00	103
12/16/2011	38.1	5.19	11.5	36.2	86.6	3.80	8.87	0.020	0.715	137
12/17/2011	20.7	5.36	12.4	34.7	75.8	11.0	11.6	0.013	1.62	243
12/18/2011	17.7	5.57	12.7	36.4	68.0	17.1	12.2	0.065	2.53	303
12/19/2011	10.6	3.72	8.38	25.8	87.5	12.1	0.391	0.021	0.031	9.18
12/20/2011	17.0	5.36	12.2	36.9	70.5	17.6	11.3	0.026	0.604	321
Mean	21.2	5.08	11.5	34.4	80.9	11.2	7.1	0.023	0.83	205
SD	8.8	0.71	1.6	4.7	8.8	4.5	4.9	0.016	0.94	110

WBC = white blood cell count

Hct = hematocrit

Individual Hematology Parameters - Group 2
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 51177 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
2/28/2012 Pre-Surgery	8.95	6.83	15.4	47.4	65.9	22.1	11.0	0.014	1.00	237
2/28/2012 Post-Surgery	12.6	5.12	11.6	35.3	95.0	4.45	0.444	0.052	0.00	202
2/29/2012 Pre-Dialysis	21.1	4.91	11.2	34.3	95.3	4.38	0.291	0.013	0.00	218
2/29/2012 Post-Dialysis	18.0	3.99	9.06	26.9	82.8	7.38	8.38	0.00	1.40	114
3/1/2012	23.7	4.78	10.8	31.4	85.6	5.50	8.03	0.010	0.906	132
3/2/2012	22.5	4.10	9.34	27.7	81.5	7.27	10.1	0.00	1.21	172
3/3/2012	21.9	4.42	10.2	28.9	78.6	7.13	13.5	0.00	0.708	227
3/4/2012	19.4	3.72	8.69	24.5	76.5	7.45	13.6	0.00	2.40	236
3/5/2012	13.0	3.46	7.89	23.2	71.9	7.30	19.9	0.039	0.839	221
Mean	17.9	4.59	10.5	31.1	81.5	8.1	9.5	0.01	0.94	195
SD	5.2	1.01	2.2	7.4	9.7	5.4	6.3	0.02	0.73	46

Animal # 31252 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
3/20/2012 Pre-Surgery	8.34	6.09	15.4	43.7	76.7	12.2	8.91	1.96	0.185	178
3/20/2012 Post-Surgery	10.2	4.90	11.4	35.2	83.3	7.27	8.20	0.026	1.18	187
3/21/2012 Pre-Dialysis	20.3	4.73	10.9	33.2	90.3	4.16	5.16	0.055	0.315	166
3/21/2012 Post-Dialysis	14.2	3.79	8.75	25.9	71.2	21.1	6.71	0.091	0.878	43.7
3/22/2012	16.5	4.21	9.84	28.7	67.9	17.9	13.5	0.081	0.647	51.1
3/23/2012	14.0	4.17	9.87	28.3	65.9	20.3	12.8	0.060	0.945	110
3/24/2012	16.5	3.84	9.20	26.8	77.6	11.1	10.8	0.00	0.544	150
3/25/2012	13.8	4.13	9.43	28.5	72.9	14.7	10.9	0.00	1.46	227
3/26/2012	10.9	3.78	8.87	25.5	69.4	15.1	13.6	0.051	1.82	240
3/27/2012	10.4	4.25	9.85	29.0	76.7	12.1	10.6	0.013	0.579	240
Mean	13.5	4.39	10.4	30.5	75.2	13.6	10.1	0.23	0.86	159
SD	3.6	0.70	2.0	5.6	7.4	5.4	2.9	0.61	0.51	72

Animal # 41267 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
4/24/2012 Post-Surgery	8.74	6.34	14.2	42.7	64.2	24.8	9.86	0.014	1.20	316
4/24/2012 Pre-Surgery	8.09	3.96	8.68	26.3	78.4	7.96	11.40	0.114	2.100	213
4/25/2012 Pre-Dialysis	31.3	4.97	11.1	32.3	88.2	5.14	6.21	0.049	0.441	203
4/25/2012 Post-Dialysis	15.2	3.62	8.32	24.2	86.1	10.4	3.30	0.080	0.120	11.8
4/26/2012	24.2	4.42	10.2	28.9	88.4	4.99	6.29	0.037	0.272	166
4/27/2012	22.2	4.42	9.85	28.5	81.8	9.36	8.34	0.063	0.389	177
4/28/2012	20.5	4.03	9.29	26.2	79.4	8.08	12.2	0.038	0.338	219
4/29/2012	8.32	4.14	9.36	27.8	86	13	1	0	0	90.9
Mean	17.3	4.49	10.1	29.6	82	10	7	0	0.61	175
SD	8.6	0.85	1.9	5.8	8	6	4	0	0.70	91

Animal # 51150 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
5/15/2012 Pre-Surgery	9.43	7.54	17.2	50.8	73.0	15.9	10.6	0.054	0.500	248
5/15/2012 Post-Surgery	9.47	5.31	12.6	35.3	82.1	7.41	8.45	0.026	1.99	204
5/16/2012 Pre-Dialysis	21.5	6.46	15.3	42.6	89.4	3.63	6.76	0.038	0.177	172
5/16/2012 Post-Dialysis	19.4	5.75	13.0	39.6	82.3	6.92	10.3	0.00	0.421	73.6
5/17/2012	19.9	5.94	13.1	38.9	81.2	7.47	10.7	0.020	0.593	78.7
5/18/2012	17.2	5.73	12.7	37.2	81.8	5.77	11.9	0.020	0.421	131
5/19/2012	17.1	5.61	12.9	37.3	75.3	11.7	12.1	0.013	0.926	170
5/20/2012	17.9	5.48	12.6	36.6	71.8	12.8	14.2	0.026	1.18	235
5/21/2012	14.10	6.01	12.9	39.6	78.70	7.72	13.4	0.00	0.228	285
5/22/2012	16.70	7.78	17.9	50.4	80.3	8.05	10.2	0.013	1.40	338
Mean	16.3	6.16	14.0	40.8	79.6	8.7	10.9	0.02	0.78	194
SD	4.1	0.85	2.0	5.5	5.2	3.6	2.2	0.02	0.58	86

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes

RBC = red blood cell count

Neut = neutrophils

Eos = eosinophils

Hgb = hemoglobin

Lymph = Lymphocytes

Baso = basophils

Tables formatted for clarity

SD = Standard Deviation

Individual Hematology Parameters - Group 2
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Animal # 51174 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
6/5/2012 Pre-Surgery	9.83	7.29	16.4	49.9	62.8	27.4	8.90	0.081	0.754	274
6/5/2012 Post-Surgery	14.4	5.71	12.9	39.1	76.2	14.2	7.24	0.039	2.28	236
6/6/2012 Pre-Dialysis	24.8	6.26	13.7	42.6	78.4	14.0	6.57	0.00	1.07	240
6/6/2012 Post-Dialysis	17.7	4.93	10.7	34.3	72.4	19.0	7.94	0.00	0.683	99.6
6/7/2012	20.9	6.35	14.2	41.7	77.5	13.3	8.69	0.010	0.487	123
6/8/2012	18.5	5.83	13.0	39.3	72.0	15.0	10.5	0.020	2.48	153
6/9/2012	17.4	6.21	14.1	41.2	64.5	17.2	12.5	0.026	5.76	221
6/10/2012	16.4	6.55	15.0	44.1	64.2	16.8	13.0	0.838	5.14	259
6/11/2012	20.8	5.79	13.4	38.6	78.0	6.65	12.7	0.192	2.48	247
6/12/2012	18.10	6.11	13.70	41.00	71.30	15.30	11.00	0.01	2.32	206.00
Mean	17.9	6.10	13.7	41.2	71.7	15.9	9.9	0.12	2.35	206
SD	4.0	0.62	1.5	4.1	6.0	5.2	2.4	0.26	1.82	60

Animal # 31290 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
6/19/2012 Pre-Surgery	10.2	5.91	13.9	42.0	65.4	25.8	7.88	0.300	0.654	228
6/19/2012 Post-Surgery	8.78	4.48	10.7	31.7	72.5	16.5	8.73	0.133	2.14	177
6/20/2012 Pre-Dialysis	11.6	5.10	12.3	36.4	69.0	14.2	15.9	0.021	0.923	163
6/20/2012 Post-Dialysis	8.11	5.10	11.7	37.3	85.8	10.5	3.46	0.010	0.225	38.1
6/21/2012	*	*	*	*	*	*	*	*	*	*
Mean	9.7	5.15	12.2	36.9	73.2	16.8	9.0	0.116	0.99	152
SD	1.6	0.59	1.3	4.2	8.9	6.5	5.2	0.135	0.82	81

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes

RBC = red blood cell count

Neut = neutrophils

Eos = eosinophils

Hgb = hemoglobin

Lymph = Lymphocytes

Baso = basophils

*Value not measured

SD = Standard Deviation

Tables formatted for clarity

Individual Hematology Parameters - Group 3
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Animal # 6179 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
11/1/2011 Pre-Surgery	7.17	5.72	13.3	40.2	80.3	11.9	7.61	0.063	0.141	310
11/1/2011 Post-Surgery	7.34	6.18	14.3	30.4	83.1	7.29	9.34	0.092	0.168	333
11/2/2011 Pre-Dialysis	26.9	6.47	15.0	46.5	94.5	4.89	0.631	0.025	0.00	249
11/2/2011 Post-Dialysis	18.6	4.56	10.5	31.2	80.2	11.4	7.99	0.020	0.461	105
11/3/2011	21.0	5.66	13.1	39.7	83.2	9.31	7.32	0.180	0.040	122
11/4/2011	12.4	5.53	13.0	37.4	82.2	8.70	9.01	0.040	0.080	54.9
11/5/2011	17.2	6.32	14.8	41.9	81.0	7.05	11.3	0.040	0.641	104
11/6/2011	15.0	6.26	14.6	41.9	77.4	9.75	10.2	0.064	2.63	225
11/7/2011	12.4	5.81	13.6	41.3	87.1	10.4	2.46	0.013	0.00	255
11/8/2011	12.4	5.81	13.6	41.3	87.1	10.4	2.46	0.013	0.00	255
Mean	15.0	5.83	13.6	39.2	83.6	9.1	6.8	0.055	0.42	201
SD	6.1	0.55	1.3	5.0	4.9	2.2	3.7	0.051	0.81	97

Animal # 2177 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
11/29/2011 Pre-Surgery	10.4	7.45	16.4	54.0	79.3	16.0	4.70	0.030	0.00	104
11/29/2011 Post-Surgery	7.81	5.94	13.5	42.9	94.4	4.88	0.744	0.014	0.00	192
11/30/2011 Pre-Dialysis	22.0	6.08	13.6	41.5	94.4	5.30	0.201	0.091	0.00	95.0
11/30/2011 Post-Dialysis	18.4	5.85	13.2	38.5	84.9	9.60	5.39	0.020	0.090	91.0
12/1/2011	16.8	6.47	14.8	43.1	84.2	8.26	7.06	0.242	0.252	85.6
12/2/2011	15.3	6.92	15.4	45.3	79.4	8.50	11.3	0.120	0.702	129
12/3/2011	23.7	5.83	13.2	37.8	92.3	3.63	3.95	0.050	0.040	0.00
12/4/2011	8.32	4.96	11.0	32.2	96.6	3.02	0.274	0.051	0.030	2.31
12/5/2011	11.4	6.10	13.5	41.2	96.8	2.85	0.272	0.121	0.00	12.0
12/6/2011	19.5	7.19	15.9	46.8	98.8	0.955	0.181	0.030	0.00	6.29
Mean	15.4	6.28	14.1	42.3	90.1	6.3	3.4	0.077	0.11	72
SD	5.7	0.74	1.6	5.8	7.4	4.4	3.8	0.070	0.22	65

Animal # 21136 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
2/28/2012 Pre-Surgery	10.2	6.69	15.4	46.0	77.0	13.5	8.19	0.040	1.29	124
2/28/2012 Post-Surgery	15.6	5.47	12.6	37.5	86.7	2.77	8.97	0.010	1.56	127
2/29/2012 Pre-Dialysis	22.5	5.90	13.6	41.0	87.9	4.76	6.45	0.010	0.882	129
2/29/2012 Post-Dialysis	19.0	4.25	9.74	28.5	85.6	7.72	6.24	0.03	0.36	58.7
3/1/2012	25.8	5.36	12.5	35.2	93.8	3.15	3.05	0.00	0.010	61.8
3/2/2012	31.4	5.66	12.9	38.5	91.2	3.03	5.19	0.020	0.582	111
3/3/2012	26.1	5.76	13.5	38.2	86.5	5.58	7.45	0.030	0.461	162
3/4/2012	22.1	5.31	12.4	35.3	80.2	6.27	10.6	0.038	2.84	202
3/5/2012	26.3	5.38	12.4	36.8	81.7	5.17	10.4	0.013	2.73	213
3/6/2012	17.4	5.23	12.1	35.7	80.4	5.28	11.9	0.052	2.36	260
Mean	21.6	5.50	12.7	37.3	85.1	5.7	7.8	0.02	1.31	145
SD	6.2	0.61	1.4	4.5	5.3	3.1	2.7	0.02	1.03	65

Animal # 31136 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
3/20/2012 Pre-Surgery	9.76	6.97	16.2	49.9	75.6	13.4	9.82	0.362	0.785	135
3/20/2012 Post-Surgery	10.0	4.81	11.3	33.5	82.2	6.64	9.78	0.013	1.38	155
3/21/2012 Pre-Dialysis	30.6	5.34	12.4	36.9	90.8	2.70	6.04	0.00	0.405	157
3/21/2012 Post-Dialysis	19.2	4.28	9.92	28.8	86.9	6.75	6.20	0.010	0.151	74.2
3/22/2012	23.9	4.93	11.8	33.5	83.7	6.63	9.32	0.040	0.351	78.6
3/23/2012	21.8	5.43	12.6	36.7	81.7	6.27	11.5	0.020	0.511	148
3/24/2012	27.9	5.18	12.2	35.6	96.7	3.01	0.320	0.00	0.00	131
3/25/2012	20.0	5.69	13.3	38.6	80.4	6.83	11.4	0.00	1.41	230
3/26/2012	17.4	5.24	12.4	35.1	78.8	7.66	10.7	0.052	2.79	245
3/27/2012	20.1	4.92	11.4	33.1	86.3	4.66	7.66	0.076	1.32	185
Mean	20.1	5.28	12.4	36.2	84.3	6.5	8.3	0.06	0.91	154
SD	6.7	0.71	1.6	5.5	6.1	3.0	3.4	0.11	0.84	56

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes</

Individual Hematology Parameters - Group 3
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Animal # 51267 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
4/24/2012 Pre-Surgery	9.44	6.01	14.1	41.2	65.8	18.4	9.79	4.89	1.14	327
4/24/2012 Post-Surgery	9.33	4.23	9.59	28.5	81.2	5.71	10.2	0.077	2.80	247
4/25/2012 Pre-Dialysis	24.7	5.47	12.7	36.3	87.7	6.09	5.79	0.189	0.202	242
4/25/2012 Post-Dialysis	24.9	4.55	10.2	30.0	87.6	6.40	5.91	0.00	0.136	160
4/26/2012	15.5	4.28	10.2	28.3	86.5	8.79	4.40	0.020	0.283	55.2
4/27/2012	17.3	4.44	10.2	29.1	80.1	8.36	10.8	0.030	0.713	121
4/28/2012	10.4	3.87	9.79	25.5	86.5	5.22	8.17	0.010	0.090	73.4
4/29/2012	9.53	3.36	7.57	22.9	90	5	5	0	0	75.9
4/30/2012 AM	12.7	3.53	8.06	24.0	88	6	6	0	0	7.76
4/30/2012 PM	5.63	4.12	9.3	27.7	88	8	4	0	0	0.00
Mean	13.9	4.39	10.2	29.4	84.1	8	7	1	1	131
SD	6.6	0.82	2.0	5.6	7.2	4	3	2	1	110

Animal # 11150 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
5/15/2012 Pre-Surgery	12.1	6.99	16.6	48.4	72.7	16.9	9.91	0.013	0.508	315
5/15/2012 Post-Surgery	9.81	4.96	11.7	33.9	83.6	5.75	9.24	0.065	1.33	227
5/16/2012 Pre-Dialysis	22.7	5.59	13.1	37.6	87.0	6.61	5.60	0.00	0.760	179
5/16/2012 Post-Dialysis	16.1	4.72	10.7	33.1	83.6	8.52	6.99	0.162	0.737	65.7
5/17/2012	25.1	5.02	11.6	33.4	88.3	5.37	5.94	0.070	0.341	68.3
5/18/2012	24.5	5.13	11.7	33.9	89.2	4.61	5.33	0.030	0.781	123
5/19/2012	21.3	4.85	11.0	33.0	79.2	16.8	3.99	0.040	0.050	123
5/20/2012	16.8	5.10	11.8	34.5	80.5	10.9	8.14	0.090	0.336	208
5/21/2012	16.4	5.52	12.5	37.0	79.0	12.8	7.50	0.092	0.605	268
5/22/2012	19.1	6.58	16.0	43.2	98.4	1.48	0.051	0.064	0.00	252
Mean	18.4	5.45	12.7	36.8	84.2	9.0	6.27	0.06	0.54	183
SD	5.1	0.76	2.0	5.1	7.1	5.2	2.85	0.05	0.39	86

Animal # 11154 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
6/5/2012 Pre-Surgery	7.68	7.38	16.6	51.1	60.6	25.6	11.6	0.082	2.08	177
6/5/2012 Post-Surgery	9.31	5.38	12.1	37.2	77.2	12.6	9.11	0.119	0.953	159
6/6/2012 Pre-Dialysis	23.2	6.69	15.0	45.1	79.2	14.6	6.22	0.013	0.013	174
6/6/2012 Post-Dialysis	13.6	4.53	10.4	31.8	73.6	12.9	12.2	1.03	0.244	48.5
6/7/2012	14.6	4.51	10.1	30.1	71.2	12.7	12.9	0.267	2.90	59.5
6/8/2012	17.3	5.21	11.8	34.8	69.2	14.5	14.2	0.010	2.04	107
6/9/2012	17.3	5.90	13.0	39.4	91.7	8.10	0.164	0.000	0.000	148
6/10/2012	13.7	6.00	13.5	40.8	68.3	14.8	12.3	0.00	4.66	194
6/11/2012	11.0	7.63	17.4	50.7	78.5	5.22	14.0	0.027	2.21	292
6/12/2012	8.33	8.31	19.0	54.9	64.5	13.1	21.0	0.021	1.45	214
Mean	13.6	6.15	13.9	41.6	73.4	13.4	11.4	0.16	1.66	157
SD	4.8	1.31	3.0	8.6	8.8	5.3	5.5	0.32	1.46	73

Animal # 61319 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
6/19/2012 Pre-Surgery	9.62	6.29	14.7	43.8	66.5	26.5	6.11	0.055	0.765	274
6/19/2012 Post-Surgery	7.15	4.28	9.79	29.5	82.0	7.21	9.41	0.062	1.27	230
6/20/2012 Pre-Dialysis	18.5	5.09	11.9	35.7	81.9	11.5	5.91	0.026	0.588	198
6/20/2012 Post-Dialysis	13.9	3.83	8.39	27.4	74.2	16.2	5.35	0.021	1.240	82.7
6/21/2012	16.2	4.36	9.82	29.2	79.4	12.2	7.68	0.020	0.687	96.2
6/22/2012	14.7	4.28	9.80	30.0	89.9	6.74	3.38	0.020	0.00	121
6/23/2012	15.7	4.02	9.31	28.3	85.2	7.1	7.32	0.129	0.258	151
6/24/2012	14.2	4.51	10.6	31.8	69.4	16.6	12.1	1.18	0.713	192
6/25/2012	13.4	5.13	11.8	37.1	74.0	12.2	12.3	0.521	0.935	231
6/26/2012	13.9	6.08	14.0	41.5	97.3	2.04	0.461	0.181	0.00	122
Mean	13.7	4.79	11.0	33.4	80.0	11.8	7.0	0.22	0.65	170
SD	3.2	0.84	2.1	5.8	9.4	6.9	3.7	0.37	0.45	65

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes

RBC = red blood cell count

Individual Hematology Parameters - Group 3
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Animal # 51322 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
9/11/2012 Pre-Surgery	8.86	6.88	16.7	49.5	72.9	18.8	7.82	0.068	0.437	290
9/11/2012 Post-Surgery	10.1	5.74	13.8	41.0	96.0	3.75	0.221	0.052	0.00	221
9/12/2012 Pre-Dialysis	22.2	6.46	15.7	44.9	88.7	5.94	5.38	0.025	0.00	235
9/12/2012 Post-Dialysis	*	*	*	*	*	*	*	*	*	*
9/13/2012	17.6	5.20	13.3	36.4	85.5	7.33	6.33	0.131	0.713	105
9/14/2012	19.6	5.45	12.9	37.7	85.7	7.79	6.50	0.00	0.020	79.9
9/15/2012	19.6	5.61	13.2	38.7	88.2	8.42	1.72	0.938	0.708	144
9/16/2012	19.8	4.54	10.8	33.3	84.0	2.89	12.7	0.020	0.445	95.8
9/17/2012	21.5	4.96	12.2	34.2	82.3	12.1	5.52	0.030	0.00	74.1
9/18/2012	21.3	5.15	12.3	35.4	84.6	14.8	0.572	0.020	0.00	54.9
Mean	17.8	5.55	13.4	39.0	85.3	9.1	5.2	0.14	0.26	144
SD	4.9	0.73	1.8	5.3	6.1	5.2	3.9	0.30	0.32	84

Animal # 4292 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
11/27/2012 Pre-Surgery	11.5	6.19	14.5	42.7	65.9	27.8	6.15	0.134	0.31	158
11/27/2012 Post-Surgery	10.10	5.01	11.7	34.9	82.40	17.50	0.13	0.000	0.00	118
11/28/2012 Pre-Dialysis	29.0	5.19	12.2	35.0	87.9	7.75	4.36	0.030	0.00	125
11/28/2012 Post-Dialysis	20.9	4.50	10.4	31.6	81.2	12.0	6.53	0.081	0.223	68.2
11/29/2012	23.0	5.07	11.7	33.9	84.7	7.94	7.07	0.010	0.253	87.2
11/30/2012	23.0	5.56	13.0	37.2	83.9	10.9	5.19	0.020	0.00	149
12/1/2012	13.3	5.49	12.9	36.9	74.3	16.4	9.24	0.105	0.026	174
12/2/2012	11.2	5.60	13.1	37.3	89.8	4.98	5.03	0.115	0.057	166
12/3/2012	10.6	5.52	12.9	37.7	93.7	5.88	0.383	0.00	0.00	107
12/4/2012	10.8	6.52	15.0	43.0	82.3	12.6	5.09	0.010	0.010	89.9
Mean	16.3	5.47	12.7	37.0	82.6	12.4	4.92	0.05	0.09	124
SD	6.9	0.58	1.3	3.6	7.9	6.8	2.82	0.05	0.12	37

Animal # 9292 (Male)										
Collection Date	WBC (K/ μ L)	RBC (M/ μ L)	Hgb (g/dL)	Hct (%)	Neut (%)	Lymph (%)	Mono (%)	Eos (%)	Baso (%)	Platelets (K/ μ L)
11/27/2012 Pre-Surgery	5.18	4.71	10.4	31.2	69.8	30.0	0.104	0.104	0.00	46.6
11/27/2012 Post-Surgery	10.2	5.24	11.8	34.5	99.1	0.801	0.042	0.014	0.00	229
11/28/2012 Pre-Dialysis	29.7	6.12	13.8	39.8	85.7	7.27	7.04	0.00	0.012	245
11/28/2012 Post-Dialysis	20.8	4.42	10.1	29.8	83.5	9.07	7.26	0.030	0.091	95.5
11/29/2012	25.8	5.98	13.4	38.7	84.5	10.4	5.04	0.051	0.00	109
11/30/2012	20.5	5.80	12.9	37.4	80.7	15.5	3.85	0.00	0.00	145
12/1/2012	20.7	5.39	12.1	34.6	86.4	3.94	9.38	0.00	0.292	175
12/2/2012	16.5	5.21	11.8	33.9	82.3	6.77	10.9	0.013	0.064	195
12/3/2012	17.3	5.41	12.2	36.0	76.0	10.4	13.6	0.013	0.00	217
41247	15.0	6.05	13.4	39.0	70.5	24.0	5.32	0.132	0.00	24.4
Mean	18.2	5.43	12.2	35.5	81.9	11.8	6.3	0.04	0.05	148
SD	7.1	0.57	1.2	3.3	8.5	9.0	4.4	0.05	0.09	77

WBC = white blood cell count

Hct = hematocrit

Mono = monocytes

RBC = red blood cell count

Neut = neutrophils

Eos = eosinophils

Hgb = hemoglobin

Lymph = Lymphocytes

Baso = basophils

* Value not measured

SD = Standard Deviation

Tables formatted for clarity

Individual Clinical Chemistry Parameters - Group 1

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 7X214 (Male)*																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
5/3/2011 Pre-Surgery	148	4.8	115	26	5.3	0.1	5.4	95	3.6	1.7	2	0.9	135	11.0	76	35	35	19
5/3/2011 Post-Surgery	144	4.5	114	15	4.1	0.1	8.5	103	2.9	1.2	2	1.9	106	10.8	55	38	42	26
5/4/2011	148	4.2	112	25	4.9	0.1	9.9	115	3.2	1.7	2	4.0	149	11.6	92	252	892	67
5/5/2011	147	4.1	114	27	4.9	0.1	8.5	117	3.1	1.8	2	3.9	165	11.6	79	220	306	68
5/6/2011	147	4.3	110	40	5.3	0.1	7.5	119	3.2	2.1	2	3.7	176	12.2	68	170	78	65
5/7/2011	138	3.9	103	18	5.0	0.1	6.7	106	3.1	1.9	2	3.2	172	11.5	59	123	37	50
5/8/2011	137	4.0	102	21	5.2	0.1	7.1	103	3.1	2.1	1	2.7	190	11.5	58	100	26	50
5/9/2011	141	3.8	106	26	5.3	0.1	5.6	105	3.2	2.1	2	2.6	193	12.0	58	85	36	37
5/10/2011	150	4.9	115	22	5.5	0.0	6.8	101	3.2	2.3	1	2.3	204	11.5	56	71	33	41
Mean	144	4.3	110	24	5.1	0.1	7.3	107	3.2	1.9	2	2.8	166	11.5	67	122	165	47
SD	5	0.4	5	7	0.4	0.0	1.5	8	0.2	0.3	0	1.0	31	0.4	13	77	287	18

Animal # 6X214 (Male)*																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
6/8/2011 Pre-Surgery	144	4.4	108	36	5.8	**	4.2	76	3.7	2.1	2	1.0	174	10.6	66	40	44	20
6/8/2011 Post-Surgery	113	5.9	84	13	3.8	**	7.2	60	2.5	1.3	2	1.4	117	7.2	47	52	50	23
6/9/2011	143	4.3	102	29	5.6	**	10.2	103	3.0	2.6	1	5.3	137	10.7	210	217	310	92
6/10/2011	144	5.5	93	46	5.6	**	12.7	113	3.3	2.3	1	10.9	217	13.8	129	233	213	135
6/11/2011	146	7.1	88	48	5.6	**	18.2	107	3.2	2.4	1	13.8	229	12.8	116	191	79	182
6/12/2011	146	6.5	79	42	5.7	**	19.3	117	3.2	2.5	1	16.6	241	20.3	106	175	46	219
6/13/2011	149	8.8	63	58	6.9	**	33.2	176	3.8	3.1	1	20.1	345	10.2	128	211	54	305
Mean	141	6.1	88	39	5.6	N/A	15.0	107	3.2	2.3	1	9.9	209	12.2	115	160	114	139
SD	12	1.6	15	15	0.9	N/A	9.7	37	0.4	0.5	0	7.5	76	4.1	52	80	105	105

Animal # 2X95 (Male)*																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
6/8/2011 Pre-Surgery	145	4.2	108	31	6.4	**	4.2	64	3.4	3.0	1	0.7	148	10.5	34	37	33	18
6/8/2011 Post-Surgery	143	7.3	110	11	5.5	**	10.9	127	3.0	2.5	1	1.4	126	9.3	38	48	48	24
6/9/2011	146	4.7	98	46	5.4	**	10.4	110	3.2	2.2	1	7.1	194	11.9	141	244	656	99
6/10/2011	143	4.2	100	36	6.0	**	13.7	109	3.1	2.9	1	7.8	159	11.5	168	188	83	118
6/11/2011	143	4.1	98	32	6.3	**	13.0	108	3.1	3.2	1	9.4	183	11.0	148	152	9	131
6/12/2011	142	3.9	95	46	6.7	**	14.7	108	3.3	3.4	1	10.2	225	11.2	144	123	28	146
6/13/2011	142	4.1	94	53	7.0	**	15.6	103	3.2	3.8	1	9.9	241	11.5	123	109	37	163
6/14/2011	140	3.7	94	42	7.0	**	13.9	112	3.2	3.8	1	9.1	231	11.5	107	86	24	166
6/15/2011	136	3.5	92	40	6.9	0.1	11.0	99	3.2	3.7	1	8.2	236	11.4	97	73	26	153
Mean	142	4.4	99	37	6.4	N/A	11.9	104	3.2	3.2	1	7.1	194	11.1	111	118	105	113
SD	3	1.1	6	12	0.6	N/A	3.4	17	0.1	0.6	0	3.6	42	0.8	48	68	208	56

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

** Value not measured.

Na = Sodium

K = Potassium

Cl = Chloride

TG = Triglycerides

TP = Total Protein

TB = Total Bilirubin

PHOS = Phosphorus (inorganic)

GLU = Glucose

Individual Clinical Chemistry Parameters - Group 1

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 3X224 (Male)*																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
7/12/2011 Pre-Surgery	145	4.39	106.8	35	5.5	0.0	5.6	68	3.6	1.9	2	0.8	173	10.8	45	44	39	14
7/12/2011 Post-Surgery	145	7.40	109.8	1	4.9	0.0	10.7	93	3.2	1.7	2	1.7	123	9.4	44	23	31	16
7/13/2011	149	4.09	102.9	6	4.8	0.1	8.0	91	3.1	1.7	2	5.1	132	11.8	117	120	483	57
7/14/2011	145	4.65	97.8	14	5.0	0.1	11.0	106	3.0	2.0	2	9.5	151	11.0	88	123	129	105
7/15/2011	154	4.88	95.1	30	5.9	0.1	14.6	112	3.25	2.7	1	13.22	193	11.8	90	115	53	145
7/16/2011	159	5.10	95.5	25	6.2	0.2	17.7	125	3.27	2.9	1	16.24	227	11.4	90	93	29	182
7/17/2011	148	5.21	75.0	44	7.1	0.2	21.5	121	3.45	3.7	1	16.71	325	9.6	134	121	53	206
7/18/2011	144	6.85	59.5	95	7.7	0.4	32.2	240	3.6	4.1	1	17.70	452	8.3	187	143	64	273
Mean	149	5.32	92.8	31	5.9	0.1	15.2	120	3.3	2.6	2	10.1	222	10.5	99	98	110	125
SD	5	1.18	17.1	30	1.1	0.1	8.6	52	0.2	0.9	1	6.9	113	1.3	47	42	154	94

Animal # A1221 (Male)*																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
7/12/2011 Pre-Surgery	146	4.42	107.4	35	5.5	0.0	5.7	67	3.6	1.9	2	0.8	170	10.9	45	43	39	14
7/12/2011 Post -Surgery	143	8.32	108.2	12	4.9	0.0	12.4	138	3.2	1.7	2	1.6	149	9.4	48	42	36	19
7/13/2011	179	5.17	130.4	29	6.1	0.1	11.3	141	3.8	2.3	2	6.0	201	13.7	136	496	1608	70
7/14/2011	144	5.15	94.3	43	4.9	0.1	14.4	131	2.9	2.0	1	9.9	186	11.1	97	370	227	120
7/15/2011	157	7.22	93.2	165	5.6	0.3	21.5	117	2.83	2.8	1	13.9	300	10.1	202	274	90	202
Mean	154	6.06	106.7	57	5.4	0.1	13.1	119	3.3	2.1	2	6.4	201	11.0	106	245	400	85
SD	15	1.64	15.0	62	0.5	0.1	5.7	30	0.4	0.4	1	5.5	59	1.6	66	201	680	78

Animal # 21342 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
9/11/2012 Pre-Surgery	143	4.82	108.7	51	5.3	0.0	8.1	87	3.20	2.1	2	0.72	168	10.7	87	22	31	14
9/11/2012 Post-Surgery	138	7.98	108.8	36	4.3	0.1	11.4	103	2.57	1.7	1	1.29	131	9.4	64	19	30	16
9/12/2012 Pre-Dialysis	169	4.42	123.0	51	6.9	0.1	12.4	140	4.04	2.9	1	4.67	245	14.1	176	101	103	58
9/13/2012	177	5.08	133.0	76	7.1	0.1	12.2	160	3.90	3.2	1	5.86	285	13.9	159	95	54	90
9/14/2012	135	3.64	97.8	57	5.5	0.1	7.9	98	2.95	2.5	1	4.62	250	10.3	118	54	32	69
9/15/2012	133	3.98	95.0	60	5.6	0.1	8.3	85	2.83	2.8	1	4.08	293	10.5	118	40	30	67
9/16/2012	124	3.64	83.6	69	5.5	0.2	7.1	79	2.32	3.2	1	3.20	294	8.8	113	30	52	55
9/17/2012	130	3.85	91.1	78	5.5	0.2	7.7	77	2.55	3.0	1	3.43	372	10.3	175	29	60	68
9/18/2012	130	4.05	87.4	140	5.6	0.3	10.9	54	2.36	3.2	1	3.79	420	10.9	244	26	67	101
Mean	142	4.61	103.2	69	5.7	0.1	9.6	98	2.97	2.7	1	3.52	273	11.0	139	46	51	60
SD	18	1.36	16.7	30	0.8	0.1	2.1	33	0.63	0.5	0	1.63	90	1.8	55	31	24	29

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

Na = Sodium

K = Potassium

Cl = Chloride

TG = Triglycerides

TP = Total Protein

TB = Total Bilirubin

PHOS = Phosphorus (inorganic)

GLU = Glucose

ALB = Albumin

GLOB = Globulin (= TP- ALB)

A/G = Alb/Glob ratio

CREAT = Creatinine

CHOL = Cholesterol

Ca = Calcium

ALK = Alkaline Phosphatase

ALT = Alanine Aminotransferase

AST = Aspartate Aminotransferase

BUN = Blood Urea Nitrogen

SD = Standard Deviation

Tables

Individual Clinical Chemistry Parameters - Group 2
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 1171 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
11/1/2011 Pre-Surgery	138	4.40	99.7	34	5.3	0.0	6.1	69	3.30	2.0	2	0.72	165	9.7	90	23	27	11
11/1/2011 Post-Surgery	127	4.46	94.5	21	3.8	0.0	8.0	84	2.32	1.5	2	1.05	119	8.5	58	22	61	15
11/2/2011 Pre-Dialysis	146	4.66	106.5	46	5.1	0.1	9.7	109	3.06	2.0	2	4.06	179	11.2	171	42	119	48
11/2/2011 Post-Dialysis	143	4.79	107.9	47	4.1	0.1	8.4	88	2.51	1.6	2	5.67	156	9.8	160	36	76	69
11/3/2011	228	7.80	180.3	44	8.5	0.1	17.9	181	4.68	3.8	1	10.77	229	19.9	121	83	50	117
11/4/2011	88	3.50	54.6	75	3.1	0.1	7.3	57	1.51	1.6	1	6.27	151	6.2	108	26	57	92
11/5/2011	158	5.41	69.3	122	5.3	0.1	12.7	83	2.42	2.9	1	10.60	277	9.3	149	39	51	**
11/6/2011	151	4.76	108.1	28	6.2	0.1	13.3	113	3.33	2.9	1	11.07	177	12.5	61	34	15	117
11/7/2011	142	6.99	84.0	139	6.1	0.1	18.4	97	2.84	3.3	1	17.39	506	10.6	180	49	58	260
11/8/2011	189	9.73	93.7	379	9.9	1.2	32.5	**	3.89	6.0	1	25.14	976	10.5	342	109	152	405
Mean	151	5.65	99.9	94	5.7	0.2	13.4	98	2.99	2.8	1	9.27	294	10.8	144	46	67	126
SD	37	1.92	33.2	108	2.1	0.4	8.0	36	0.89	1.4	1	7.56	264	3.6	82	28	41	128

Animal # 9X245 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
11/29/2011 Pre-Surgery	142	4.82	107.1	35	5.7	0.0	4.9	101	3.65	2.0	2	0.64	179	10.3	33	47	26	15
11/29/2011 Post-Surgery	140	8.33	111.6	21	4.2	0.0	8.5	137	2.77	1.4	2	1.36	135	9.1	26	39	34	21
11/30/2011 Pre-Dialysis	147	3.71	106.4	36	5.1	0.1	7.8	109	3.31	1.8	2	3.41	169	10.0	77	76	88	52
11/30/2011 Post-Dialysis	129	4.07	102.7	33	3.4	0.0	6.0	98	2.12	1.3	2	3.15	123	7.6	58	51	34	49
12/1/2011	140	3.76	107.5	55	4.9	0.1	7.4	111	2.95	2.0	2	3.94	186	9.4	71	70	37	55
12/2/2011	144	3.61	107.4	45	5.5	0.1	8.1	125	3.33	2.2	2	4.01	224	10.8	72	72	23	54
12/3/2011	147	4.17	108.0	40	5.7	0.1	7.6	123	3.30	2.4	1	3.83	234	11.4	67	63	23	58
12/4/2011	144	4.62	107.4	40	5.5	0.1	7.2	106	3.19	2.3	1	3.25	232	10.9	60	56	21	55
12/5/2011	146	4.24	110.0	38	5.5	0.1	5.2	109	3.24	2.3	1	2.93	238	11.3	55	50	27	46
12/6/2011	144	4.30	106.9	41	5.5	0.1	6.0	101	3.16	2.3	1	2.48	231	10.8	54	47	30	45
Mean	142	4.56	107.5	38	5.1	0.1	6.9	112	3.10	2.0	2	2.90	195	10.2	57	57	34	45
SD	5	1.38	2.3	9	0.8	0.0	1.3	13	0.42	0.4	1	1.12	43	1.2	17	12	20	15

Animal # 1X323 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
12/13/2011 Pre-Surgery	144	4.96	111.3	34	5.8	0.1	4.4	77	3.58	2.2	2	0.67	128	10.8	59	50	28	16
12/13/2011 Post-Surgery	*	*	*	17	4.1	0.0	10.1	117	2.62	1.5	2	1.52	87	8.8	44	59	51	24
12/14/2011 Pre-Dialysis	150	4.14	111.4	28	5.4	0.1	7.5	57	3.35	2.0	2	3.81	140	11.8	135	106	176	57
12/14/2011 Post-Dialysis	140	3.80	111.9	44	3.9	0.1	6.6	114	2.37	1.5	2	3.71	110	9.2	110	81	70	65
12/15/2011	149	3.60	115.4	55	5.1	0.1	6.8	117	3.06	2.0	2	3.97	145	10.7	131	96	57	70
12/16/2011	148	4.10	114.4	46	5.8	0.1	7.1	109	3.37	2.4	1	4.00	167	11.5	124	88	25	60
12/17/2011	143	4.13	107.3	47	5.6	0.1	6.6	113	3.24	2.4	1	3.77	159	11.2	110	70	20	61
12/18/2011	143	4.17	108.5	41	5.8	0.1	5.6	116	3.24	2.6	1	3.34	169	11.4	100	60	21	50
12/19/2011	145	4.05	105.8	55	6.0	0.1	5.9	94	3.30	2.7	1	3.05	172	11.3	91</			

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Animal # 91117 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
12/13/2011 Pre-Surgery	154	5.28	116.4	64	6.3	0.0	8.4	67	3.77	2.5	1	0.65	184	13.1	111	30	22	13
12/13/2011 Post-Surgery	141	7.13	110.1	40	4.0	0.0	12.6	210	2.59	1.4	2	1.32	118	8.9	90	23	22	18
12/14/2011 Pre-Dialysis	143	4.81	105.8	33	5.1	0.1	9.1	46	3.14	2.0	2	3.69	162	11.0	167	85	132	52
12/14/2011 Post-Dialysis	145	4.01	112.3	57	4.4	0.1	8.6	92	2.75	1.6	2	4.85	157	10.8	140	77	67	68
12/15/2011	144	3.75	103.4	61	5.2	0.1	10.0	90	3.15	2.0	2	5.61	198	11.1	164	84	47	79
12/16/2011	140	3.40	98.9	63	5.8	0.1	9.0	70	3.28	2.5	1	6.05	246	11.2	159	77	35	88
12/17/2011	144	4.06	94.6	78	6.2	0.2	10.9	123	3.43	2.8	1	5.52	278	12.2	153	66	24	103
12/18/2011	143	4.24	98.8	61	6.5	0.1	10.4	121	3.56	2.9	1	4.94	288	12.9	142	56	20	103
12/19/2011	139	4.10	97.9	48	6.4	0.1	10.0	101	3.47	2.9	1	3.96	279	12.7	127	49	22	91
12/20/2011	138	3.83	96.4	56	6.1	0.0	8.5	112	3.24	2.9	1	3.38	259	11.9	109	37	18	74
Mean	143	4.46	103.5	56	5.6	0.1	9.8	103	3.24	2.4	1	4.00	217	11.6	136	58	41	69
SD	4	1.08	7.4	13	0.9	0.1	1.3	45	0.36	0.6	1	1.81	61	1.3	26	23	36	32

Animal # 51177 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
2/28/2012 Pre-Surgery	144	5.21	107.6	42	5.8	0.1	6.8	71	3.91	1.9	2	0.63	253	11.3	111	47	28	16
2/28/2012 Post-Surgery	144	8.02	111.7	7	4.5	0.0	11.1	103	3.02	1.5	2	1.44	185	10.0	97	60	43	23
2/29/2012 Pre-Dialysis	146	5.14	110.7	29	4.6	0.1	8.6	101	3.05	1.5	2	4.00	191	11.3	160	323	430	64
2/29/2012 Post-Dialysis	123	4.13	94.1	30	3.7	0.1	6.8	89	2.35	1.4	2	4.26	152	9.2	115	229	228	67
3/1/2012	144	5.64	102.4	46	4.7	0.1	11.4	112	2.92	1.8	2	7.26	231	11.2	151	248	96	114
3/2/2012	142	6.16	103.1	50	4.8	0.1	12.4	108	2.93	1.9	2	9.93	257	11.8	133	191	34	**
3/3/2012	142	6.58	100.1	50	5.0	0.2	14.0	97	2.91	2.1	1	11.68	268	12.0	130	166	24	169
3/4/2012	142	6.58	100.1	50	5.0	0.2	14.0	97	2.91	2.1	1	11.68	268	12.0	130	166	24	169
3/5/2012	146	5.63	99.1	52	5.0	0.2	15.8	87	2.70	2.3	1	14.83	291	8.8	100	107	24	**
Mean	141	5.90	103.2	40	4.8	0.1	11.2	96	2.97	1.8	2	7.30	233	10.8	125	171	103	89
SD	7	1.11	5.8	15	0.6	0.1	3.2	12	0.41	0.3	1	5.01	47	1.2	22	90	139	64

Animal # 31252 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
3/20/2012 Pre-Surgery	145	5.07	106.3	29	5.4	0.1	7.0	86	3.53	1.9	2	0.60	173	11.0	611	25	31	19
3/20/2012 Post-Surgery	146	6.00	107.5	7	4.2	0.1	11.6	103	2.78	1.4	2	1.34	133	10.3	429	22	42	26
3/21/2012 Pre-Dialysis	140	5.46	101.2	18	4.5	0.1	8.7	77	2.83	1.7	2	4.34	159	11.0	312	37	139	79
3/21/2012 Post-Surgery	140	5.62	105.2	23	4.1	0.1	8.8	106	2.52	1.6	2	5.47	154	10.9	250	34	97	99
3/22/2012	137	6.16	100.6	34	4.2	0.1	10.5	106	2.62	1.6	2	7.12	169	10.9	227	32	46	126
3/23/2012	136	6.55	95.5	25	4.6	0.1	13.2	114	2.83	1.8	2	9.99	186	11.4	213	33	26	176
3/24/2012	108	5.51	73.2	18	3.6	0.1	10.9	92	2.17	1.4	2	9.76	152	8.1	151	22	16	185
3/25/2012	133	6.18	87.2	20	4.8	0.2	14.5	110	2.87	1.9	1	14.40	208	8.8	175	25	17	250
3/26/2012	133	5.79	82.8	18	5.0	0.1	15.8	122	2.98	2.0	1	16.54	222	7.6	163	24	22	270
3/27/2012	135	5.66	82.9	28	5.3	0.1	17.7	126	2.98	2.3</td								

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Animal # 41267 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
4/24/2012 Pre-Surgery	153	4.95	113.9	22	6.4	0.1	7.1	89	3.91	2.5	2	0.76	153	12.8	103	42	30	18
4/24/2012 Post-Surgery	189	5.91	148.6	2	5.5	0.0	13.1	130	3.49	2.0	2	1.51	127	14.5	87	41	84	28
4/25/2012 Pre-Dialysis	197	6.19	151.1	21	6.1	0.0	12.0	142	3.61	2.5	1	5.31	155	15.1	126	80	193	80
4/25/2012 Post-Dialysis	147	4.76	111.4	26	4.4	0.1	7.9	110	2.76	1.6	2	4.75	129	11.1	81	60	75	70
4/26/2012	149	4.25	105.6	35	4.7	0.1	10.6	102	2.62	2.1	1	6.38	151	9.6	75	53	47	92
4/27/2012	142	6.07	98.3	27	4.5	0.1	13.8	103	2.57	1.9	1	8.31	151	11.4	70	45	27	140
4/28/2012	144	6.63	98.8	28	4.8	0.1	15.8	112	2.59	2.2	1	10.85	178	12.6	67	45	21	190
4/29/2012	141	6.59	82.0	70	6.0	0.2	**	149	3.06	2.9	1	12.57	274	10.7	79	56	26	**
Mean	158	5.67	113.7	29	5.3	0.1	11.5	117	3.08	2.2	1	6.31	165	12.2	86	53	63	88
SD	22	0.90	24.4	19	0.8	0.1	3.2	21	0.53	0.4	1	4.16	47	1.9	20	13	58	61

Animal # 51150 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
5/15/2012 Pre-Surgery	175	5.76	134.2	28	7.9	0.0	6.0	89	4.01	3.9	1	1.18	173	13.2	76	66	38	26
5/15/2012 Post-Surgery	199	7.60	159.7	3	6.9	0.0	13.2	149	3.58	3.3	1	2.39	147	14.6	64	72	56	37
5/16/2012 Pre-Dialysis	217	6.42	163.9	18	8.4	0.1	11.4	175	4.20	4.2	1	7.75	206	17.9	129	251	262	94
5/16/2012 Post-Dialysis	144	5.18	106.6	20	5.4	0.1	7.0	101	2.71	2.7	1	6.84	137	11.7	75	189	142	81
5/17/2012	217	8.34	167.5	27	8.2	0.1	15.1	156	3.79	4.4	1	13.73	218	18.4	106	274	133	165
5/18/2012	143	5.80	97.6	20	5.4	0.1	14.7	100	2.57	2.8	1	12.56	157	11.5	63	146	50	128
5/19/2012	148	6.20	99.6	25	5.5	0.1	17.9	110	2.67	2.8	1	15.74	176	11.4	59	137	37	260
5/20/2012	159	7.51	100.5	29	6.7	0.1	24.0	117	3.16	3.5	1	20.78	234	11.5	65	144	38	292
5/21/2012	146	7.74	83.3	42	6.2	0.2	29.2	111	2.70	3.5	1	21.84	322	9.0	99	145	56	344
5/22/2012	144	6.03	79.9	33	7.3	0.1	26.0	111	3.32	4.0	1	22.88	282	9.2	66	210	90	324
Mean	169	6.66	119.3	25	6.8	0.1	16.5	122	3.27	3.5	1	12.57	205	12.8	80	163	90	175
SD	31	1.05	34.0	10	1.2	0.1	7.8	28	0.60	0.6	0	7.89	60	3.2	23	69	72	120

Animal # 51174 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
6/5/2012 Pre-Surgery	146	4.77	110.5	59	6.7	0.1	5.0	64	3.71	3.0	1	0.89	208	11.0	54	40	28	19
6/5/2012 Post-Surgery	145	5.57	113.0	29	5.3	0.0	9.0	109	2.97	2.3	1	1.65	165	10.7	44	34	41	26
6/6/2012 Pre-Dialysis	145	4.45	111.3	26	5.5	0.0	6.5	115	3.13	2.4	1	4.42	191	10.9	136	62	177	60
6/6/2012 Post-Dialysis	133	3.76	102.4	37	4.4	0.1	6.7	98	2.36	2.0	1	4.93	141	9.5	87	50	94	76
6/7/2012	139	3.48	98.2	49	5.3	0.1	10.7	113	2.85	2.5	1	6.24	174	10.5	92	60	51	104
6/8/2012	143	3.57	103.0	45	5.9	0.1	11.8	116	3.14	2.8	1	7.44	195	11.8	92	59	33	114
6/9/2012	146	3.81	101.1	52	5.9	0.1	11.2	105	3.09	2.8	1	7.54	198	11.3	81	48	24	126
6/10/2012	145	3.99	102.5	62	6.3	0.1	10.2	106	3.27	3.0	1	7.17	219	11.8	78	45	25	96
6/11/2012	143	3.68	102.1	53	6.1	0.1	8.7	114	3.15	3.0	1	5.89	227	11.5	74	35	23	101
6/12/2012	155	6.53	90.4	91	7.4	0.2	26.4	79	3.45	4.0	1	20.85	404	9.9	163	77	34	384
Mean	144	4.36	103.5	50	5.9	0.1	10.6	102										

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Animal # 31290 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
6/19/2012 Pre-Surgery	143	4.55	107.6	25	5.4	0.1	5.5	79	3.56	1.8	2	0.72	145	10.6	99	29	26	13
6/19/2012 Post-Surgery	145	5.10	112.9	6	4.1	0.0	9.6	107	2.74	1.4	2	1.24	106	9.3	73	24	27	20
6/20/2012 Pre-Dialysis	177	3.80	93.2	20	4.3	0.0	7.0	108	2.76	1.5	2	3.83	120	9.7	124	48	81	52
6/20/2012 Post-Dialysis	150	4.42	110.4	49	4.4	0.1	9.2	115	2.81	1.6	2	5.72	162	9.9	226	62	64	82
6/21/2012	142	5.49	100.6	440	5.2	0.2	15.5	102	3.04	2.2	1	7.49	238	11.5	320	73	70	102
Mean	151	4.67	104.9	108	4.7	0.1	9.4	102	2.98	1.7	2	3.80	154	10.2	168	47	54	54
SD	15	0.65	8.0	186	0.6	0.1	3.8	14	0.34	0.3	0	2.89	52	0.9	103	21	25	38

Na = Sodium

K = Potassium

Cl = Chloride

TG = Triglycerides

TP = Total Protein

TB = Total Bilirubin

PHOS = Phosphorus (inorganic)

GLU = Glucose

ALB = Albumin

GLOB = Globulin (= TP- ALB)

A/G = Alb/Glob ratio

CREAT = Creatinine

CHOL = Cholesterol

Ca = Calcium

ALK = Alkaline Phosphatase

ALT = Alanine Aminotransferase

AST = Aspartate Aminotransferase

BUN = Blood Urea Nitrogen

SD = Standard Deviation

Tables formatted for clarity

Individual Clinical Chemistry Parameters - Group 3
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Animal # 6179 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
11/1/2011 Pre-Surgery	206	6.73	161.0	33	7.8	0.0	9.6	106	4.71	3.1	2	1.10	177	15.2	82	30	32	14
11/1/2011 Post-Surgery	164	5.56	126.6	12	5.1	0.0	10.8	91	3.21	1.9	2	1.32	112	11.6	45	22	36	16
11/2/2011 Pre-Dialysis	138	4.69	100.6	21	5.0	0.1	8.9	113	3.04	2.0	2	3.78	120	11.3	95	47	126	39
11/2/2011 Post-Dialysis	**	**	**	31	4.7	0.1	10.3	111	2.91	1.8	2	5.36	119	12.0	79	50	86	59
11/3/2011	159	5.53	118.6	29	5.4	0.1	11.5	121	3.11	2.3	1	7.50	146	12.6	78	51	31	83
11/4/2011	137	4.41	95.3	22	5.1	0.1	11.1	96	2.93	2.2	1	7.90	134	11.2	66	41	19	84
11/5/2011	184	5.94	135.2	38	7.5	0.1	16.6	125	3.98	3.5	1	12.54	212	15.6	86	52	23	***
11/6/2011	145	4.52	101.6	28	6.1	0.1	13.1	110	3.33	2.8	1	10.63	175	12.4	62	35	15	111
11/7/2011	142	4.10	98.5	32	5.8	0.1	11.5	93	3.20	2.6	1	10.67	171	12.5	51	27	14	117
11/8/2011	167	5.79	116.6	68	7.5	0.1	17.9	134	3.62	3.9	1	11.68	237	14.7	82	77	68	156
Mean	160	5.25	117.1	31	6.0	0.1	12.1	110	3.40	2.6	1	7.25	160	12.9	73	43	45	75
SD	23	0.87	21.5	15	1.2	0.0	2.9	14	0.56	0.7	1	4.21	42	1.6	16	37	48	

Animal # 2177 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
11/29/2011 Pre-Surgery	145	5.07	104.8	29	5.5	0.1	5.9	62	3.62	1.9	2	0.91	167	10.7	62	25	29	15
11/29/2011 Post-Surgery	139	8.29	104.7	3	4.1	0.0	11.2	91	2.78	1.3	2	1.67	119	8.8	53	20	28	21
11/30/2011 Pre-Dialysis	149	4.20	109.6	34	5.2	0.1	8.7	101	3.50	1.7	2	3.18	178	11.5	110	50	129	56
11/30/2011 Post-Dialysis	144	3.67	106.0	47	4.6	0.0	7.9	112	2.95	1.6	2	2.79	168	10.3	83	48	73	54
12/1/2011	143	3.58	104.3	51	5.4	0.1	7.8	105	3.26	2.1	2	2.62	208	11.0	87	54	36	39
12/2/2011	145	3.46	103.1	40	5.7	0.1	7.0	112	3.43	2.3	2	2.48	228	11.2	82	48	22	28
12/3/2011	140	3.28	98.8	36	5.3	0.1	5.8	98	3.11	2.2	1	2.17	222	10.2	76	37	25	25
12/4/2011	138	3.92	97.5	65	5.7	0.2	6.7	92	3.04	2.7	1	1.94	293	10.4	104	32	42	24
12/5/2011	134	3.61	92.9	108	5.8	0.2	5.9	92	2.86	2.9	1	1.64	386	10.1	150	29	45	33
12/6/2011	132	3.61	89.2	165	5.9	0.3	5.8	65	2.80	3.1	1	1.41	491	10.1	202	26	66	40
Mean	141	4.27	101.1	58	5.3	0.1	7.3	93	3.14	2.2	2	2.08	246	10.4	101	37	50	34
SD	5	1.50	6.4	46	0.6	0.1	1.7	17	0.30	0.6	1	0.70	114	0.8	45	12	33	14

Animal # 21136 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
2/28/2012 Pre-Surgery	146	4.70	108.0	59	6.0	0.0	4.8	62	3.78	2.2	2	0.85	192	11.3	67	55	31	13
2/28/2012 Post-Surgery	150	7.74	115.8	25	4.7	0.1	9.1	108	3.00	1.7	2	1.67	149	9.5	58	44	43	22
2/29/2012 Pre-Dialysis	149	4.66	111.5	34	5.0	0.1	6.7	104	3.19	1.8	2	4.24	166	12.1	142	191	***	45
2/29/2012 Post-Dialysis	123	3.58	94.6	37	3.7	0.1	4.6	97	2.32	1.4	2	4.22	130	9.0	94	145	373	48
3/1/2012	166	4.28	124.2	67	5.6	0.2	7.8	127	3.28	2.3	1	6.30	227	11.1	135	185	174	80
3/2/2012	145	3.88	105.3	82	5.8	0.1	9.0	95	3.14	2.7	1	5.04	299	11.2	131	126	33	75
3/3/2012	154	4.53	113.1	103	6.2	0.2	9.7	114	3.25	3.0	1	4.60	322	12.3	125	107	25	86
3/4/2012	159	4.77	120.1	57	6.5	0.1	7.6	115	3.35	3.2	1	*	324	*	113	86	25	74
3/5/2012	149	4.17	108.7	53	6.1	0.1	6.5	101	3.16	2.9	1	2.77	286	11.7	92	69	33	53</

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Animal # 31136 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
3/20/2012 Pre-Surgery	147	4.61	108.1	42	5.8	0.1	4.7	74	3.67	2.1	2	0.70	184	11.4	124	24	26	20
3/20/2012 Post-Surgery	148	4.58	116.4	14	4.2	0.1	7.5	93	2.76	1.4	2	1.19	132	10.1	73	20	35	26
3/21/2012 Pre-Dialysis	146	4.54	107.4	25	4.9	0.2	6.2	63	3.13	1.8	2	4.10	175	10.5	150	59	182	64
3/21/2012 Post-Dialysis	144	4.39	110.8	37	4.8	0.1	6.6	114	2.70	2.1	1	5.11	161	10.3	119	54	113	80
3/22/2012	143	4.40	106.7	54	4.8	0.1	9.1	104	2.85	2.0	1	6.54	192	10.3	116	55	57	100
3/23/2012	144	4.37	100.1	57	5.6	0.2	12.5	110	3.30	2.3	1	8.76	235	11.2	114	56	34	130
3/24/2012	131	4.31	89.3	47	5.3	0.2	12.1	108	2.99	2.3	1	9.36	244	10.3	98	44	18	145
3/25/2012	135	4.07	90.6	51	5.9	0.2	12.9	100	3.26	2.6	1	10.27	275	11.2	97	39	17	160
3/26/2012	136	3.73	92.9	52	6.3	0.1	13.0	105	3.33	3.0	1	10.27	283	11.8	94	38	21	165
3/27/2012	136	3.68	93.9	55	6.3	0.1	11.1	112	3.21	3.1	1	9.44	283	11.2	88	33	16	150
Mean	141	4.27	101.6	43	5.4	0.1	9.6	98	3.12	2.3	1	6.57	216	10.8	107	42	52	104
SD	6	0.33	9.5	14	0.7	0.1	3.1	17	0.30	0.5	0	3.65	55	0.6	22	14	54	54

Animal # 51267 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
4/24/2012 Pre-Surgery	157	4.96	114.0	33	6.4	0.0	8.4	95	3.73	2.7	1	0.71	163	12.1	154	35	43	13
4/24/2012 Post-Surgery	147	6.15	112.5	3	4.2	0.0	11.3	116	2.35	1.9	1	1.26	105	9.9	99	25	37	21
4/25/2012 Pre-Dialysis	188	5.28	142.6	34	6.4	0.1	10.7	144	3.51	2.9	1	4.68	190	13.0	244	44	114	69
4/25/2012 Post-Dialysis	146	3.75	110.6	43	4.5	0.1	7.8	120	2.42	2.1	1	4.19	162	9.8	188	31	97	67
4/26/2012	142	4.32	104.3	50	4.9	0.1	9.9	127	2.61	2.3	1	5.02	197	9.5	172	30	57	90
4/27/2012	141	3.91	97.6	80	5.5	0.2	11.5	125	2.61	2.9	1	5.52	280	10.7	178	26	43	103
4/28/2012	132	3.89	93.4	108	5.7	0.4	10.0	108	2.27	3.4	1	4.92	335	10.0	177	23	69	102
4/29/2012	127	3.55	89.6	117	5.2	0.3	8.2	102	2.09	3.1	1	4.63	370	9.5	169	20	63	103
4/30/2012 AM	135	2.96	95.4	134	6.0	0.6	8.6	114	2.25	3.8	1	4.37	484	9.9	216	27	133	107
4/30/2012 PM	136	3.18	95.4	135	6.3	1.1	10.1	121	2.30	4.0	1	4.13	541	10.4	238	28	109	108
Mean	145	4.20	105.5	74	5.5	0.3	9.7	117	2.61	2.9	1	3.94	283	10.5	184	29	77	78
SD	17	1.00	15.6	47	0.8	0.3	1.3	14	0.56	0.7	0	1.62	147	1.2	42	7	34	36

Animal # 11150 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
5/15/2012 Pre-Surgery	146	5.26	108.9	26	6.1	0.0	5.6	72	3.21	2.9	1	0.85	133	10.6	54	34	33	22
5/15/2012 Post-Surgery	222	10.66	179.9	3	6.5	0.0	14.3	179	3.46	3.0	1	2.52	134	14.0	55	63	37	
5/16/2012 Pre-Dialysis	138	4.94	99.7	12	4.8	0.0	8.5	104	2.55	2.3	1	5.12	125	10.9	62	144	130	60
5/16/2012 Post-Dialysis	139	5.62	104.2	17	4.8	0.1	8.4	100	2.47	2.3	1	6.76	130	10.9	58	182	253	78
5/17/2012	188	7.21	141.3	35	7.1	0.1	14.5	147	3.32	3.8	1	12.45	222	13.7	113	272	183	148
5/18/2012	140	6.54	96.1	38	5.3	0.1	13.1	112	2.44	2.9	1	12.53	205	9.8	87	168	63	158
5/19/2012	142	7.13	93.9	41	5.3	0.1	16.0	121	2.48	2.8	1	15.49	232	9.4	88	148	44	216
5/20/2012	176	9.10	109.4	46	7.1	0.2	31.2	136	3.22	3.9	1	22.94	349	12.3	114	168	61	372
5/21/2012	144	6.42	87.2	28	6.4	0.1	24.											

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Animal # 11154 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
6/5/2012 Pre-Surgery	144	4.40	109.9	40	6.4	0.1	4.5	65	3.49	2.9	1	0.74	179	10.6	59	36	30	16
6/5/2012 Post-Surgery	144	5.16	113.1	12	4.7	0.0	9.2	94	2.59	2.1	1	1.31	130	10.3	43	34	39	23
6/6/2012 Pre-Dialysis	146	4.49	105.5	21	5.5	0.1	8.0	123	3.07	2.4	1	4.71	172	11.6	155	88	123	69
6/6/2012 Post-Surgery	146	4.80	106.5	45	4.2	0.1	10.9	145	2.28	1.9	1	6.24	134	11.3	97	61	46	101
6/7/2012	142	5.59	98.9	56	5.0	0.1	12.8	123	2.67	2.3	1	8.46	166	12.0	91	65	39	153
6/8/2012	146	5.87	99.0	50	5.6	0.1	15.0	124	2.98	2.6	1	11.33	196	13.4	97	71	45	177
6/9/2012	146	6.09	97.2	48	5.9	0.2	16.8	107	3.07	2.8	1	14.04	228	12.6	97	69	37	240
6/10/2012	147	6.80	96.2	45	6.2	0.1	18.7	112	3.12	3.1	1	16.69	251	12.1	92	65	28	255
6/11/2012	143	3.58	101.9	53	6.1	0.1	8.6	113	3.14	3.0	1	5.87	228	11.5	74	35	24	102
6/12/2012	155	6.50	90.5	95	7.3	0.2	26.8	86	3.46	3.8	1	20.60	409	9.8	163	77	33	388
Mean	146	5.33	101.9	47	5.7	0.1	13.1	109	2.99	2.7	1	9.00	209	11.5	97	60	44	152
SD	4	1.02	6.9	22	0.9	0.1	6.5	23	0.38	0.6	0	6.57	81	1.1	38	19	29	116

Animal # 61319 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
6/19/2012 Pre-Surgery	143	4.73	106.0	43	5.7	0.0	7.1	88	3.48	2.2	2	0.75	140	10.8	126	27	31	14
6/19/2012 Post-Surgery	145	5.59	112.6	13	4.2	0.0	10.3	94	2.59	1.6	2	1.23	101	9.9	90	21	31	20
6/20/2012 Pre-Dialysis	184	5.91	137.7	35	5.7	0.0	11.2	128	3.47	2.2	2	5.82	159	13.1	185	88	226	82
6/20/2012 Post-Dialysis	163	6.12	123.4	38	5.3	0.1	11.2	118	3.12	2.2	1	6.81	151	12.6	153	77	118	98
6/21/2012	142	6.35	99.7	40	4.9	0.1	12.4	106	2.84	2.1	1	8.66	158	11.6	132	62	53	130
6/22/2012	177	8.57	127.4	56	6.3	0.2	15.8	151	3.53	2.8	1	14.72	235	12.9	171	71	42	232
6/23/2012	140	7.18	94.5	59	5.2	0.2	13.7	116	2.76	2.4	1	13.65	241	10.1	145	50	28	196
6/24/2012	176	9.78	115.0	87	7.2	0.2	20.4	135	3.59	3.6	1	19.82	359	12.5	178	62	34	308
6/25/2012	141	8.41	83.5	69	6.2	0.2	18.6	112	3.05	3.2	1	18.53	310	8.7	142	65	41	300
6/26/2012	147	8.45	72.4	88	6.6	0.2	24.3	181	3.11	3.5	1	21.22	360	6.8	164	88	59	384
Mean	156	7.11	107.2	53	5.7	0.1	14.5	123	3.15	2.6	1	11.12	221	10.9	149	61	66	176
SD	17	1.62	20.2	24	0.9	0.1	5.3	28	0.35	0.7	0	7.53	95	2.1	28	23	62	128

Animal # 51322 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
9/11/2012 Pre-Surgery	143	4.72	104.5	27	5.9	0.1	5.7	68	3.87	2.0	2	0.74	161	10.7	104	32	30	14
9/11/2012 Post-Surgery	142	7.86	105.5	29	5.0	0.1	13.3	194	3.28	1.7	2	1.46	132	9.2	97	32	36	18
9/12/2012 Pre-Dialysis	187	3.15	82.5	35	5.4	0.1	7.8	115	3.37	2.0	2	4.55	154	10.2	112	93	247	56
9/12/2012 Post-Dialysis	143	4.28	109.4	42	4.5	0.1	8.8	121	2.88	1.6	2	6.01	154	10.4	96	80	133	69
9/13/2012	140	4.09	103.1	53	5.1	0.1	9.4	137	3.26	1.8	2	6.89	187	10.6	105	90	114	79
9/14/2012	137	3.63	95.9	52	5.7	0.2	8.8	135	3.38	2.3	1	8.41	244	10.2	107	80	46	93
9/15/2012	138	3.96	94.6	72	6.1	0.2	11.7	118	3.40	2.7	1	8.90	322	11.2	108	63	34	127
9/16/2012	112	3.80	73.2	79	5.5	0.3	10.4	90	2.65	2.8	1	7.19	319	9.2	105	44	40	116
9/17/2012	132	3.36	89.1	105	6.1	0.2	11.2	123	2.99	3.1</								

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Animal # 4292 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
11/27/2012 Pre-Surgery	147	5.30	109.7	50	5.5	0.1	7.0	61	3.56	1.9	2	0.71	185	11.3	89	28	33	16
11/27/2012 Post-Surgery	178	4.48	95.8	45	4.0	0.1	9.0	103	2.61	1.4	2	1.14	127	8.9	59	31	29	18
11/28/2012 Pre-Dialysis	147	4.29	100.4	29	4.7	0.0	10.7	83	3.03	1.7	2	4.87	180	11.3	112	58	78	68
11/28/2012 Post-Dialysis	147	5.29	105.8	44	4.6	0.1	11.6	105	2.89	1.7	2	6.06	188	11.4	96	54	53	91
11/29/2012	144	4.93	101.3	43	4.6	0.1	13.0	93	2.84	1.8	2	7.61	202	11.3	93	51	35	107
11/30/2012	146	4.87	99.0	48	5.2	0.2	14.6	91	3.16	2.0	2	10.69	248	11.5	92	52	30	129
12/1/2012	147	4.82	99.7	51	5.5	0.2	16.0	98	3.20	2.3	1	12.29	275	11.2	85	53	21	147
12/2/2012	146	4.70	97.4	53	5.8	0.2	15.5	98	3.37	2.4	1	13.70	304	11.1	81	47	20	165
12/3/2012	145	4.26	97.5	63	6.1	0.1	15.6	99	3.43	2.7	1	14.77	355	11.3	86	43	19	178
12/4/2012	143	4.16	93.5	75	6.3	0.1	17.8	89	3.38	2.9	1	15.26	403	11.5	86	57	31	320
Mean	149	4.71	100.0	50	5.2	0.1	13.1	92	3.15	2.1	2	8.71	247	11.1	88	47	35	124
SD	10	0.41	4.8	12	0.7	0.1	3.4	13	0.30	0.5	1	5.43	87	0.8	13	10	18	89

Animal # 9292 (Male)																		
Date	Na (mmol/L)	K (mmol/L)	Cl (mmol/L)	TG (mg/dL)	TP (g/dL)	TB (mg/dL)	PHOS (mg/dL)	GLU (mg/dL)	ALB (g/dL)	GLOB (g/dL)	A/G	CREAT (mg/dL)	CHOL (mg/dL)	Ca (mg/dL)	ALK (U/L)	ALT (U/L)	AST (U/L)	BUN (mg/dL)
11/27/2012 Pre-Surgery	133	4.93	99.1	33	4.5	0.0	5.6	49	2.74	1.8	2	0.55	171	9.4	82	28	26	14
11/27/2012 Post-Surgery	143	8.05	109.9	22	4.6	0.0	9.8	82	2.90	1.7	2	1.16	177	9.9	71	29	27	22
11/28/2012 Pre-Dialysis	148	4.75	106.4	36	5.2	0.1	9.4	70	3.20	2.0	2	3.44	221	11.2	130	51	65	64
11/28/2012 Post-Dialysis	147	4.20	110.4	45	4.5	0.1	9.0	100	2.68	1.8	1	4.13	201	10.7	114	48	42	84
11/29/2012	149	4.60	106.3	55	5.2	0.1	9.8	90	3.06	2.1	1	4.97	241	11.5	123	54	34	97
11/30/2012	143	4.17	104.0	53	5.4	0.1	9.5	93	3.07	2.3	1	5.95	257	11.3	105	46	20	100
12/1/2012	146	4.59	106.9	54	5.6	0.1	8.8	110	3.13	2.5	1	5.69	273	11.0	99	41	14	104
12/2/2012	143	4.05	105.8	72	5.7	0.1	7.8	97	3.00	2.7	1	4.89	321	10.4	102	32	14	100
12/3/2012	142	4.07	101.8	95	6.0	0.1	7.9	101	2.98	3.0	1	4.43	376	11.3	104	26	18	95
12/4/2012	141	3.46	101.7	76	6.1	<0.1	7.1	94	2.92	3.2	1	3.92	409	11.4	100	22	22	80
Mean	144	4.69	105.2	54	5.3	0.1	8.5	89	2.97	2.3	1	3.91	265	10.8	103	38	28	76
SD	5	1.26	3.6	22	0.6	0.0	1.4	18	0.16	0.5	0	1.79	81	0.7	17	12	16	33

Na = Sodium

TP = Total Protein

ALB = Albumin

CHOL = Cholesterol

AST = Aspartate Aminotransferase

K = Potassium

TB = Total Bilirubin

GLOB = Globulin (= TP - ALB)

Ca = Calcium

BUN = Blood Urea Nitrogen

Cl = Chloride

PHOS = Phosphorus (inorganic)

A/G = Alb/Glob ratio

ALK = Alkaline Phosphatase

SD = Standard Deviation

TG = Triglycerides

GLU = Glucose

CREAT = Creatinine

ALT = Alanine Aminotransferase

Tables formatted for clarity

Individual Coagulation Parameters - Group 1
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 7X214 (Male)*		
Date	PT (sec)	APTT (sec)
5/3/2011 Pre-Surgery ^^	6.90	12.6
5/3/2011 Post-Surgery ^^	6.15	10.7
5/4/2011	6.30	13.8
5/5/2011	^	^
5/6/2011	6.30	7.95
5/7/2011	6.15	11.4
5/8/2011	6.15	11.1
5/9/2011	6.15	10.5
5/10/2011	6.30	11.1
Mean	6.30	11.1
SD	0.25	1.7

Animal # 6X214 (Male)*		
Date	PT (sec)	APTT (sec)
6/8/2011 Pre-Surgery	7.05	11.0
6/8/2011 Post-Surgery	7.35	11.4
6/9/2011	7.35	12.2
6/10/2011	6.45	10.8
6/11/2011	7.05	10.2
6/12/2011	6.75	9.75
6/13/2011	6.60	8.40
Mean	6.94	10.5
SD	0.35	1.2

Animal # 2X95 (Male)*		
Date	PT (sec)	APTT (sec)
6/8/2011 Pre-Surgery	7.20	11.7
6/8/2011 Post-Surgery	7.95	11.7
6/9/2011	6.75	13.4
6/10/2011	6.75	10.8
6/11/2011	6.75	9.30
6/12/2011	6.45	11.9
6/13/2011	6.75	9.60
6/14/2011	7.05	**
6/15/2011	7.05	9.75
Mean	6.97	11.0
SD	0.43	1.4

Animal # 3X224 (Male)*		
Date	PT (sec)	APTT (sec)
7/12/2011 Pre-Surgery	6.75	12.6
7/12/2011 Post-Surgery	7.05	13.2
7/13/2011 Pre-Dialysis	6.60	12.9
7/14/2011	6.15	9.30
7/15/2011	6.15	8.25
7/16/2014	6.00	9.30
7/17/2011	6.15	10.8
7/18/2011	6.45	12.5
Mean	6.41	11.1
SD	0.37	1.9

Animal # A1221 (Male)*		
Date	PT (sec)	APTT (sec)
7/12/2011 Pre-Surgery	6.90	12.8
7/12/2011 Post-Surgery	7.20	11.6
7/13/2011 Pre-Dialysis	6.90	12.3
7/14/2011	6.75	13.2
7/15/2011	6.75	15.3
Mean	6.90	13.0
SD	0.18	1.4

Animal # 21342 (Male)		
Date	PT (sec)	APTT (sec)
Pre-Surgery	6.30	14.1
Post-Dialysis	6.60	17.0
9/29/2010	6.15	15.0
9/30/2010	6.15	16.8
10/1/2010	6.15	15.3
10/2/2010	6.15	14.7
10/3/2010	6.15	13.2
10/4/2010	6.15	13.1
10/5/2010	6.30	13.8
Mean	6.23	14.8
SD	0.15	1.4

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

** Not Coagulated

^ Data not available

^^ Data cannot be assigned to Pre or Post-Dose

PT = Prothrombin Time (PT)

APTT = Activated Partial Thromboplastin Time (APTT)

SD = Standard Deviation

Tables formatted for clarity

Individual Coagulation Parameters - Group 2
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 1171 (Male)		
Date	PT (sec)	APTT (sec)
11/1/2011 Pre-Surgery	8.10	12.60
11/1/2011 Post-Surgery	8.55	15.20
11/2/2011 Pre-Dialysis	7.50	NM
11/2/2011 Post-Dialysis	8.10	26.90
11/3/2011	7.65	10.40
11/4/2011	7.20	13.10
11/5/2011	**	**
11/6/2011	**	**
11/7/2011	7.80	10.80
11/8/2011	7.65	14.30
Mean	7.82	14.8
SD	0.42	5.6

Animal # 9X245 (Male)		
Date	PT (sec)	APTT (sec)
11/29/2011 Pre-Surgery	8.40	11.90
11/29/2011 Post-Surgery	9.00	14.10
11/30/2011 Pre-Dialysis	8.10	14.00
11/30/2011 Post-Dialysis	8.25	24.80
12/1/2011	7.65	11.10
12/2/2011	7.80	7.80
12/3/2011	7.80	8.10
12/4/2011	7.65	8.55
12/5/2011	7.95	8.85
Mean	8.07	12.1
SD	0.44	5.3

Animal # 1X323 (Male)		
Date	PT (sec)	APTT (sec)
12/13/2011 Pre-Surgery	7.20	13.4
12/13/2011 Post-Surgery	7.80	16.4
12/14/2011 Pre-Dialysis	6.60	12.8
12/14/2011 Post-Dialysis	6.90	23.7
12/15/2011	6.45	11.9
12/16/2011	6.60	6.90
12/17/2011	6.45	6.75
12/18/2011	6.60	9.75
12/19/2011	7.05	8.85
12/20/2011	6.60	10.8
Mean	6.83	12.1
SD	0.43	5.0

Animal # 91117 (Male)		
Date	PT (sec)	APTT (sec)
12/13/2011 Pre-Surgery	6.75	12.6
12/13/2011 Post-Surgery	7.50	13.2
12/14/2011 Pre-Dialysis	6.75	14.6
12/14/2011 Post-Dialysis	6.90	19.4
12/15/2011	6.60	14.4
12/16/2011	6.45	10.4
12/17/2011	6.30	11.0
12/18/2011	6.30	10.4
12/19/2011	6.60	7.35
12/20/2011	6.30	10.4
Mean	6.65	12.4
SD	0.37	3.3

Animal # 51177 (Male)		
Date	PT (sec)	APTT (sec)
2/28/2012 Pre-Surgery	6.90	11.40
2/28/2012 Post-Surgery	7.35	12.60
2/29/2012 Pre-Dialysis	6.75	13.20
2/29/2012 Post-Dialysis	6.75	15.30
3/1/2012	6.45	11.00
3/2/2012	6.60	11.40
3/3/2012	6.30	11.60
3/4/2012	6.50	11.10
3/5/2012	6.90	14.10
Mean	6.72	12.4
SD	0.31	1.5

Animal # 31252 (Male)		
Date	PT (sec)	APTT (sec)
3/20/2012 Pre-Surgery	6.75	12.80
3/20/2012 Post-Surgery	7.05	13.80
3/21/2012 Pre-Dialysis	6.90	17.4
3/21/2012 Post-Dialysis	6.75	18.6
3/22/2012	6.75	16.10
3/23/2012	6.15	9.60
3/24/2012	6.75	8.55
3/25/2012	6.75	10.40
3/26/2012	6.75	11.10
3/27/2012	6.45	8.70
Mean	6.71	12.7
SD	0.25	3.7

Animal # 41267 (Male)		
Date	PT (sec)	APTT (sec)
4/24/2012 Pre-Surgery	6.60	12.6
4/24/2012 Post-Surgery	7.05	14.6
4/25/2012 Pre-Dialysis	6.45	12.9
4/25/2012 Post-Dialysis	6.30	17.4
4/26/2012	6.30	10.5
4/27/2012	6.00	9.30
4/28/2012	6.15	8.25
4/29/2012	6.15	6.45
Mean	6.38	11.5
SD	0.33	3.6

Animal #51150 (Male)		
Date	PT (sec)	APTT (sec)
5/15/2012 Pre-Surgery	7.65	11.9
5/15/2012 Post-Surgery	8.10	13.4
5/16/2012 Pre-Dialysis	7.20	14.7
5/16/2012 Post-Dialysis	7.05	18.5
5/17/2012	7.20	15.6
5/18/2012	6.75	11.6
5/19/2012	6.30	12.0
5/20/2012	6.30	9.30
5/21/2012	6.00	10.8
5/22/2012	5.85	10.4
Mean	6.84	12.8
SD	0.73	2.8

** Not Coagulated

PT = Prothrombin Time (PT)

APTT = Activated Partial Thromboplastin Time (APTT)

SD = Standard Deviation

Tables formatted for clarity

Animal # 51174 (Male)		
Date	PT (sec)	APTT (sec)
6/5/2012 Pre-Surgery	6.75	11.1
6/5/2012 Post-Surgery	6.90	11.4
6/6/2012 Pre-Dialysis	6.45	11.6
6/6/2012 Post-Dialysis	5.85	13.7
6/7/2012	5.85	9.15
6/8/2012	5.85	9.9
6/9/2012	6.00	8.85
6/10/2012	6.00	8.70
6/11/2012	6.00	9.00
6/12/2012	5.85	8.25
Mean	6.15	10.2
SD	0.40	1.7

Individual Coagulation Parameters - Group 3
Toxikon Project #: 11-5203-N1
AKI Therapeutic Trials

Animal # 6179 (Male)		
Date	PT (sec)	APTT (sec)
11/1/2011 Pre-Surgery	7.65	12.30
11/1/2011 Post-Surgery	7.95	13.70
11/2/2011 Pre-Dialysis	7.05	12.30
11/2/2011 Post-Dialysis	7.05	14.90
11/3/2011	6.60	10.40
11/4/2011	6.90	NM
11/5/2011	6.45	NM
11/6/2011	6.30	8.10
11/7/2011	6.60	9.00
11/8/2011	6.45	8.85
Mean	6.90	11.19
SD	0.54	2.48

Animal # 2177 (Male)		
Date	PT (sec)	APTT (sec)
11/29/2011 Pre-Surgery	7.95	10.70
11/29/2011 Post-Surgery	8.55	11.60
11/30/2011 Pre-Dialysis	7.80	11.90
11/30/2011 Post-Dialysis	7.35	14.30
12/1/2011	7.20	11.10
12/2/2011	7.20	10.20
12/3/2011	7.80	6.75
12/4/2011	NM	NM
12/5/2011	7.35	13.80
12/6/2011	7.80	14.30
Mean	7.67	11.63
SD	0.44	2.40

Animal # 21136 (Male)		
Date	PT (sec)	APTT (sec)
2/28/2012 Pre-Surgery	6.90	11.40
2/28/2012 Post-Surgery	7.20	12.80
2/29/2012 Pre-Dialysis	6.75	13.50
2/29/2012 Post-Dialysis	6.60	18.60
3/1/2012	6.60	12.20
3/2/2012	6.50	14.10
3/3/2012	6.30	11.00
3/4/2012	6.30	9.90
3/5/2012	6.50	10.20
3/6/2012	6.75	12.00
Mean	6.64	12.57
SD	0.27	2.51

Animal # 31136 (Male)		
Date	PT (sec)	APTT (sec)
3/20/2012 Pre-Surgery	6.90	12.00
3/20/2012 Post-Surgery	7.50	15.20
3/21/2012 Pre-Dialysis	6.60	14.7
3/21/2012 Post-Dialysis	6.60	19.8
3/22/2012	6.60	15.00
3/23/2012	6.75	8.85
3/24/2012	6.30	7.50
3/25/2012	6.30	9.15
3/26/2012	6.45	7.95
3/27/2012	6.60	9.20
Mean	6.66	11.94
SD	0.35	4.08

Animal # 51267 (Male)		
Date	PT (sec)	APTT (sec)
4/24/2012 Pre-Surgery	6.90	11.90
4/24/2012 Post-Surgery	7.50	15.00
4/25/2012 Pre-Dialysis	6.90	13.80
4/25/2012 Post-Dialysis	6.75	16.40
4/26/2012	6.60	15.60
4/27/2012	6.15	9.15
4/28/2012	6.30	7.50
4/29/2012	6.30	10.10
4/30/2012 AM	6.30	11.70
4/30/2012 PM	6.45	13.50
Mean	6.62	12.47
SD	0.41	2.92

Animal # 11150 (Male)		
Date	PT (sec)	APTT (sec)
5/15/2012 Pre-Surgery	7.50	9.9
5/15/2012 Post-Surgery	7.95	12.9
5/16/2012 Pre-Dialysis	7.35	14.3
5/16/2012 Post-Dialysis	7.20	17.9
5/17/2012	7.05	15.2
5/18/2012	6.90	8.70
5/19/2012	6.45	10.4
5/20/2012	6.45	10.8
5/21/2012	6.30	10.8
5/22/2012	6.30	13.8
Mean	6.95	12.5
SD	0.57	2.8

Animal # 11154 (Male)		
Date	PT (sec)	APTT (sec)
6/5/2012 Pre-Surgery	6.75	12.3
6/5/2012 Post-Surgery	7.05	12.8
6/6/2012 Pre-Dialysis	6.45	12.6
6/6/2012 Post-Dialysis	6.00	14.6
6/7/2012	5.85	12.0
6/8/2012	5.85	10.1
6/9/2012	6.15	9.15
6/10/2012	6.00	9.45
6/11/2012	6.00	9.00
6/12/2012	5.85	10.5
Mean	6.20	11.3
SD	0.42	1.9

Animal # 61319 (Male)		
Date	PT (sec)	APTT (sec)
6/19/2012 Pre-Surgery	6.60	12.9
6/19/2012 Post-Surgery	7.05	11.6
6/20/2012 Pre-Dialysis	6.45	13.4
6/20/2012 Post-Dialysis	6.45	18.2
6/21/2012	6.30	14.1
6/22/2012	6.60	12.3
6/23/2012	6.90	12.6
6/24/2012	7.20	11.7
6/25/2012	7.05	10.5
6/26/2012	6.15	10.2
Mean	6.68	12.8
SD	0.36	2.3

Animal # 51322 (Male)		
Date	PT (sec)	APTT (sec)
9/11/2012 Pre-Surgery	7.50	14.40
9/11/2012 Post-Surgery	7.65	14.70
9/12/2012 Pre-Dialysis	6.90	18.80
9/12/2012 Post-Dialysis	NM	NM
9/13/2012	6.90	14.90
9/14/2012	6.90	12.60
9/15/2012	7.20	9.00
9/16/2012	7.35	11.40
9/17/2012	7.05	11.40
9/18/2012	7.05	21.20
Mean	7.17	14.27
SD	0.28	3.81

Animal # 4292 (Male)		
Date	PT (sec)	APTT (sec)
11/27/2012 Pre-Surgery	6.60	12.50
11/27/2012 Post-Surgery	NM	NM
11/28/2012 Pre-Dialysis	6.90	15.50
11/28/2012 Post-Dialysis	6.75	16.70
11/29/2012	6.45	

Individual Urinalysis Parameters - Group 1

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 7X214 (Male)*									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
5/3/2011 Pre-Surgery	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.036
5/3/2011 Post -Surgery	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.030
5/4/2011	8	Neg	Light	Neg	Neg	Normal	Neg	4+	1.010
5/5/2011	5	Neg	Light	Neg	Neg	Normal	Neg	3+	1.008
5/6/2011	6	Neg	Light	Neg	Neg	Normal	Neg	3+	1.007
5/7/2011	6	Neg	Light	Neg	Neg	Normal	Neg	Neg	1.010
5/8/2011	6	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.008
5/9/2011	7	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.015
5/10/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.010

Animal # 6X214 (Male)*									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
6/8/2011 Pre-Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	3+	1.015
6/8/2011 Post -Surgery	7	2+	1+	Neg	Neg	Normal	Neg	3+	1.015
6/9/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/10/2011	7	3+	1+	Neg	Neg	Normal	Neg	4+	1.003
6/11/2011	7	3+	Trace	Neg	Neg	Normal	Neg	4+	1.005
6/12/2011	7	3+	1+	Neg	Neg	Normal	Neg	4+	1.005
6/13/2011	6	3+	1+	Neg	Neg	Normal	Neg	2+	1.007
6/14/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/15/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 2X95 (Male)*									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
6/8/2011 Pre-Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.025
6/8/2011 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.025
6/9/2011	7	2+	1+	Neg	Neg	Normal	Neg	4+	1.005
6/10/2011	6	Neg	Trace	Neg	Neg	Normal	Neg	3+	1.000
6/11/2011	6	2+	Trace	Neg	Neg	Normal	Neg	3+	1.002
6/12/2011	5	2+	Trace	Neg	Neg	Normal	Neg	Neg	1.005
6/13/2011	5	2+	Trace	Neg	Neg	Normal	Neg	2+	1.005
6/14/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.002
6/15/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.004

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Individual Urinalysis Parameters - Group 1

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 3X224 (Male)*									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
7/12/2011 Pre-Surgery	6	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.027
7/12/2011 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.015
7/13/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/14/2011	7	3+	1+	Neg	Neg	Normal	Neg	4+	1.003
7/15/2011	7	3+	1+	Neg	Neg	Normal	Neg	4+	1.002
7/16/2011	7	2+	1+	Neg	Neg	Normal	Neg	4+	1.003
7/17/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/18/2011	6	3+	3+	Neg	Neg	Normal	Neg	4+	1.007
7/19/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # A1221 (Male)*									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
7/12/2011 Pre-Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.030
7/12/2011 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.032
7/13/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/14/2011	6	3+	3+	Neg	Neg	Normal	Neg	4+	1.002
7/15/2011	7	2+	1+	1+	Neg	Normal	Neg	4+	1.000
7/16/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/17/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/18/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/19/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 21342 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
9/11/2012 Pre-Surgery	5	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.029
9/11/2012 Post -Surgery	5	Neg	30	Neg	Neg	Normal	Neg	Neg	1.029
9/12/2012	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS
9/13/2012	5	Neg	Neg	Neg	Neg	Neg	Neg	3+	1.005
9/14/2012	5	2+	150	Neg	Neg	Normal	Neg	3+	1.002
9/15/2012	6	2+	150	Neg	Neg	Normal	N/A	3+	1
9/16/2012	6	Neg	30	Neg	Neg	Normal	Neg	2+	1.002
9/17/2012	6	Neg	30	Neg	Neg	Normal	Neg	2+	1.026
9/18/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Animal was tested as a part of Project # 10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

QNS = Quantity not sufficient for analysis (no urine collected due to bladder being empty)

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Individual Urinalysis Parameters - Group 2

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 1171 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
11/1/2011 Pre-Surgery	6	Neg	Neg	Neg	Normal	Neg	Neg	Neg	1.025
11/1/2011 Post -Surgery	6	3+	1+	Neg	Neg	Normal	Neg	2+	1.010
11/2/2011 Pre-Dialysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/2/2011 Post-Dialysis	7	3+	2+	Neg	Neg	Normal	Neg	4+	1.017
11/3/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/4/2011	7	3+	1+	Neg	Neg	Normal	Neg	4+	1.002
11/5/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/6/2011	6	2+	1+	Neg	Neg	Normal	Neg	2+	1.000
11/7/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/8/2011	7	2+	Neg	Neg	Neg	Normal	Neg	2+	1.007

Animal # 9X245 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
11/29/2011 Pre-Surgery	6	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.040
11/29/2011 Post -Surgery	6	Neg	2+	Neg	Neg	Normal	Neg	Neg	1.034
11/30/2011 Pre-Dialysis	7	Neg	2+	Neg	Neg	Normal	Neg	2+	1.002
11/30/2011 Post-Dialysis	7	Neg	2+	Neg	Neg	Normal	Neg	4+	1.020
12/1/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	3+	1.005
12/2/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.005
12/3/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.015
12/4/2011	5	Neg	Trace	Neg	Neg	N/A	Neg	Neg	1.005
12/5/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.005
12/6/2011	5	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.012

Animal # 1X323 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
12/13/2011 Pre-Surgery	6	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.040
12/13/2011 Post -Surgery	6	Neg	1+	Neg	Neg	Normal	Neg	3+	1.032
12/14/2011 Pre-Dialysis	7	Neg	1+	Neg	Neg	Normal	Neg	4+	1.005
12/14/2011 Post-Dialysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/15/2011	9	Neg	Neg	Neg	1+	Normal	1+	1+	1.010
12/16/2011	5	Neg	Neg	Neg	Neg	Normal	Neg	3+	1.011
12/17/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	2+	1.015
12/18/2011	5	Neg	1+	Neg	Neg	Normal	Neg	2+	1.020
12/19/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.015
12/20/2011	5	Neg	2+	Neg	Neg	Normal	Neg	2+	1.012

Animal # 91117 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
12/13/2011 Pre-Surgery	5	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.030
12/13/2011 Post -Surgery	5	2+	1+	Neg	Neg	Normal	Neg	3+	1.026
12/14/2011 Pre-Dialysis	7	2+	1+	Neg	Neg	Normal	Neg	3+	<1.000
12/14/2011 Post-Dialysis	5	3+	1+	Neg	Neg	Normal	Neg	4+	1.002
12/15/2011	7	Neg	Neg	1+	1+	Normal	1+	3+	0.500
12/16/2011	5	2+	Neg	Neg	Neg	Normal	Neg	3+	1.000
12/17/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	<1.000
12/18/2011	5	Neg	1+	Neg	Neg	Normal	Neg	1+	<1.000
12/19/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	3+	1.000
12/20/2011	5	Neg	1+	1+	Neg	Normal	Neg	1+	1.000

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Individual Urinalysis Parameters - Group 2

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 51177 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
02/28/2012 Pre-Surgery	6	Neg	Trace	Neg	Neg	Normal	Neg	Neg	>1.040
02/28/2012 Post -Surgery	5	3+	1+	Neg	Neg	Normal	Neg	4+	1.033
02/29/2012 Pre-Dialysis	7	Neg	3+	4+	Neg	Normal	Neg	4+	1.004
02/29/2012 Post-Dialysis	7	Neg	3+	4+	Neg	Normal	Neg	3+	1.000
3/1/2012	7	Neg	Trace	Neg	Neg	Normal	Neg	2+	1.333
3/2/2012	6	Neg	2+	Neg	Neg	Normal	Neg	2+	1.010
3/3/2012	7	Neg	2+	2+	Neg	Normal	Neg	2+	1.000
3/4/2012	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS
3/5/2012	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS
3/6/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 31252 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
03/20/2012 Pre-Surgery	6	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.039
03/20/2012 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	3+	1.037
03/21/2012 Pre-Dialysis	9	Neg	Neg	Neg	Neg	Normal	Neg	4+	1.004
03/21/2012 Post-Dialysis	7	2+	Neg	Neg	Neg	Normal	Neg	4+	1.005
3/22/2012	6	2+	1+	Neg	Neg	Normal	Neg	4+	1.002
3/23/2012	6	1+	1+	2+	Neg	Normal	Neg	4+	1.000
3/24/2012	6	1+	1+	Neg	Neg	Normal	Neg	4+	1.000
3/25/2012	6	1+	1+	Neg	Neg	Normal	Neg	4+	1.000
3/26/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/27/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 41267 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
4/24/2012 Pre-Surgery	7	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.010
4/24/2012 Post -Surgery	7	Neg	1	Neg	Neg	Normal	Neg	4+	1.010
4/25/2012 Pre-Dialysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/25/2012 Post-Dialysis	5	3+	1+	Neg	Neg	Normal	Neg	4+	1.000
4/26/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2012	6	3+	3+	Neg	Neg	Normal	Neg	4+	1.000
4/28/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/29/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/1/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 51150 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
5/15/2012 Pre-Surgery	6	3+	Trace	Neg	Neg	Normal	Neg	Neg	1.040
5/15/2012 Post -Surgery	6	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.033
5/16/2012 Pre-Dialysis	7	3+	1+	Neg	Neg	Normal	Neg	2+	1.004
5/16/2012 Post-Dialysis	7	2+	1+	1+	Neg	Normal	Neg	2+	1.004
5/17/2012	5	2+	1+	Neg	Neg	Normal	Neg	2+	1.002
5/18/2012	6	Neg	1+	Neg	Neg	Normal	Neg	2+	1.002
5/19/2012	6	2+	1+	Neg	Neg	Normal	Neg	2+	1.002
5/20/2012	7	2+	1+	1+	Neg	Normal	Neg	4+	1.000
5/21/2012	6	3+	1+	1+	Neg	Normal	Neg	4+	1.000
5/22/2012	6	3+	1+	1+	Neg	Normal	Neg	3+	1.000

QNS = Quantity not sufficient for analysis

N/A = Not Applicable

Neg = Negative

Tables formatted for clarity

Individual Urinalysis Parameters - Group 2

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 51174 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
6/05/2012 Pre-Surgery	5	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.022
6/05/2012 Post -Surgery	6	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.026
6/06/2012 Pre-Dialysis	7	Neg	2+	1+	Neg	Normal	Neg	4+	1.008
6/06/2012 Post-Dialysis	9	Neg	Neg	1+	Neg	Normal	Neg	3+	1.009
6/7/2012	5	Neg	Neg	Neg	Neg	Normal	Neg	2+	1.005
6/8/2012	5	2+	Trace	Neg	Neg	Normal	Neg	2+	1.007
6/9/2012	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.007
6/10/2012	5	Neg	Trace	Neg	Neg	Normal	Neg	2+	1.007
6/11/2012	5	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.005
6/12/2012	5	1+	Neg	Neg	Neg	Normal	Neg	1+	1.005

Animal # 31290 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
6/19/2012 Pre-Surgery	7	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.025
6/19/2012 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.025
6/20/2012 Pre-Dialysis	8	Neg	1+	1+	Neg	Normal	Neg	2+	1.000
6/20/2012 Post-Dialysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/21/2012	6	Neg	1+	1+	Neg	Normal	Neg	3+	1.000
6/22/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/23/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/25/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/26/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Individual Urinalysis Parameters - Group 3

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 6179 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
11/1/2011 Pre-Surgery	6	Neg	2+	Neg	Neg	Normal	Neg	2+	1.036
11/1/2011 Post -Surgery	7	3+	1+	Neg	Neg	Normal	Neg	2+	1.025
11/2/2011 Pre-Dialysis	7	Neg	1+	Neg	Neg	Normal	Neg	4+	1.010
11/2/2011 Post-Dialysis	7	Neg	1+	Neg	Neg	Normal	Neg	4+	1.008
11/3/2011	5	2+	Trace	Neg	Neg	Normal	Neg	4+	1.000
11/4/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	4+	1.001
11/5/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	4+	0.750
11/6/2011	5	Neg	1+	Neg	Neg	Normal	Neg	1+	3.000
11/7/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	2+	1.004
11/8/2011	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.005

Animal # 2177 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
11/29/2011 Pre-Surgery	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.032
11/29/2011 Post -Surgery	7	3+	2+	Neg	Neg	Normal	Neg	2+	1.025
11/30/2011 Pre-Dialysis	7	Neg	2+	2+	Neg	Normal	Neg	2+	1.002
11/30/2011 Post-Dialysis	8	Neg	1+	2+	Neg	Normal	Neg	4+	1.005
12/1/2011	5	Neg	1+	Neg	Neg	Normal	Neg	2+	1.004
12/2/2011	5	Neg	1+	Neg	Neg	Normal	Neg	1+	1.020
12/3/2011	6	Neg	1+	Neg	Neg	Normal	Neg	1+	1.015
12/4/2011	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/5/2011	5	Neg	1+	Neg	Neg	Normal	Neg	3+	1.032
12/6/2011	5	Neg	2+	Neg	Neg	Normal	Neg	3+	1.020

Animal # 21136 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
2/28/2012 Pre-Surgery	7	Neg	2+	Neg	Neg	Normal	Neg	Neg	1.035
2/28/2012 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.025
2/29/2012 Pre-Dialysis	8	Neg	3+	Neg	Neg	Normal	Neg	4+	1.020
2/29/2012 Post-Dialysis	7	3+	3+	Neg	Neg	Normal	Neg	4+	1.009
3/1/2012	7	Neg	1+	3+	Neg	Normal	Neg	2+	1.000
3/2/2012	6	Neg	1+	2+	Neg	Normal	Neg	2+	1.007
3/3/2012	5	Neg	2+	2+	Neg	Normal	Neg	4+	1.000
3/4/2012	5	1+	Trace	Neg	Neg	Normal	Neg	4+	1.010
3/5/2012	5	Neg	1+	Neg	Neg	Normal	Neg	4+	1.017
3/6/2012	5	Neg	1+	Neg	Neg	Normal	Neg	4+	1.014

Animal # 31136 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
3/20/2012 Pre-Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.038
3/20/2012 Post -Surgery	7	Neg	1+	Neg	Neg	Normal	Neg	1+	1.031
3/21/2012 Pre-Dialysis	7	Neg	2+	Neg	Neg	Normal	Neg	3+	1.022
3/21/2012 Post-Dialysis	6	3+	2+	Neg	Neg	Normal	Neg	2+	1.020
3/22/2012	6	3+	Trace	Neg	Neg	Normal	Neg	2+	1.000
3/23/2012	5	3+	1+	Neg	Neg	Normal	Neg	4+	1.000
3/24/2012	6	3+	1+	Neg	Neg	Normal	Neg	4+	1.002
3/25/2012	6	2+	Trace	Neg	Neg	Normal	Neg	4+	1.000
3/26/2012	5	3+	1+	Neg	Neg	Normal	Neg	4+	1.005
3/27/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Individual Urinalysis Parameters - Group 3

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 51267 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
4/24/2012 Pre-Surgery	8	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.034
4/24/2012 Post -Surgery	8	Neg	1+	Neg	Neg	Normal	Neg	Neg	1.034
4/25/2012 Pre-Dialysis	7	Neg	1+	Neg	Neg	Normal	Neg	4+	1.000
4/25/2012 Post-Dialysis	7	Neg	1+	Neg	Neg	Normal	Neg	4+	1.000
4/26/2012	6	2+	1+	2+	Neg	Normal	Neg	1+	1.000
4/27/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/29/2012	6	Neg	Neg	2+	Neg	Normal	Neg	N/A	1.007
4/30/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/1/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 11150 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
05/15/2012 Pre-Surgery	6	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.032
05/15/2012 Post -Surgery	6	Neg	Trace	Neg	Neg	Normal	Neg	1+	1.032
05/16/2012 Pre-Dialysis	7	2+	2+	Neg	Neg	Normal	Neg	4+	1.007
05/16/2012 Post-Dialysis	7	2+	3+	1+	Neg	Normal	Neg	4+	1.005
5/17/2012	6	2+	2+	Neg	Neg	Normal	Neg	4+	1.002
5/18/2012	7	2+	2+	1+	Neg	Normal	Neg	3+	1.002
5/19/2012	7	2+	2+	Neg	Neg	Normal	Neg	2+	1.002
5/20/2012	7	2+	2+	Neg	Neg	Normal	Neg	3+	1.002
5/21/2012	6	2+	2+	1+	Neg	Normal	Neg	1+	1.000
5/22/2012	6	2+	1+	Neg	Neg	Normal	Neg	2+	1.000

Animal # 11154 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
6/05/2012 Pre-Surgery	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.036
6/05/2012 Post -Surgery	6	Neg	Trace	Neg	Neg	Normal	Neg	2+	1.024
6/06/2012 Pre-Dialysis	6	Neg	1+	1+	Neg	Normal	Neg	4+	1.020
6/06/2012 Post-Dialysis	6	Neg	1+	1+	Neg	Normal	Neg	2+	1.015
6/7/2012	6	Neg	1+	1+	Neg	Normal	Neg	3+	1.007
6/8/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/9/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/10/2012	6	2+	Trace	1+	Neg	Normal	Neg	2+	1.002
6/11/2012	6	3+	1+	1+	Neg	Normal	Neg	1+	1.004
6/12/2012	7	1+	1+	Neg	Neg	Normal	Neg	3+	1.002

Animal # 61319 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
6/19/2012 Pre-Surgery	7	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.021
6/19/2012 Post -Surgery	6	Neg	1+	Neg	Neg	Normal	Neg	3+	1.033
6/20/2012 Pre-Dialysis	7	Neg	1+	Neg	Neg	Normal	Neg	2+	1.009
6/20/2012 Post-Dialysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/21/2012	6	2+	1+	Neg	Neg	Normal	Neg	4+	1.000
6/22/2012	7	3+	1+	1+	Neg	Normal	Neg	4+	1.000
6/23/2012	7	3+	1+	1+	Neg	Normal	Neg	4+	1.000
6/24/2012	6	2+	1+	Neg	Neg	Normal	Neg	4+	1.000
6/25/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/26/2012	7	Neg	2+	1+	Neg	Normal	Neg	4+	1.002

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Individual Urinalysis Parameters - Group 3

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Animal # 51322 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
9/11/2012 Pre-Surgery	6	Neg	30	Neg	Neg	Normal	2+	Neg	1.035
9/11/2012 Post -Surgery	6	Neg	30	Neg	Neg	Normal	2+	3+	1.033
9/12/2012 Pre-Dialysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/12/2012 Post-Dialysis	7	2+	30	50	Neg	Normal	Neg	4+	1.004
9/13/2012	6	2+	30	150	Neg	Normal	Neg	4+	1.002
9/14/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/15/2012	5	2+	30	150	Neg	Normal	Neg	4+	1.000
9/16/2012	5	2+	30	Neg	Neg	Normal	Neg	4+	1.000
9/17/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/18/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Animal # 4292 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
11/27/2012 Pre-Surgery	5	Neg	100	Neg	Neg	Neg	Normal	Neg	1.037
11/27/2012 Post -Surgery	5	Neg	100	Neg	Neg	Normal	N/A	4+	1.030
11/28/2012 Pre-Dialysis	7	1+	30	500	Neg	Normal	Neg	Neg	1.006
11/28/2012 Post-Dialysis	7	1+	30	50	Neg	Neg	Neg	Neg	1.012
11/29/2012	6	2+	Trace	1+	Neg	Neg	Neg	1+	1.000
11/30/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/1/2012	5	Neg	30	Neg	Neg	Normal	Neg	Neg	1.003
12/2/2012	5	Neg	Neg	Normal	Neg	Normal	Neg	Neg	1.003
12/3/2012	5	1+	30	Normal	Neg	Normal	2+	4+	1.003
12/4/2012	5	Neg	30	Neg	Neg	Normal	Neg	Neg	1.006

Animal # 9292 (Male)									
Date	PH	Leukocytes	Protein	Glucose	Ketones	Urobilinogen	Bilirubin	Blood	Specific Gravity
11/27/2012 Pre-Surgery	6	Neg	30	Neg	Neg	Normal	1+	Neg	1.036
11/27/2012 Post -Surgery	6	Neg	30	Neg	Neg	Normal	2+	Neg	1.036
11/28/2012 Pre-Dialysis	7	Neg	100	500	Neg	Normal	Neg	Neg	1.008
11/28/2012 Post-Dialysis	7	3+	100	500	Neg	Normal	1+	4+	1.009
11/29/2012	5	Neg	Trace	Neg	Neg	Normal	Neg	Neg	1.006
11/30/2012	5	Neg	Neg	Neg	Neg	Normal	Neg	Neg	1.005
12/1/2012	6	3+	Neg	Neg	Neg	Normal	1+	Neg	1.009
12/2/2012	5	1+	Neg	Neg	Neg	Normal	Neg	Neg	1.011
12/3/2012	5	1+	30	Normal	Neg	Normal	Neg	3+	1.007
12/4/2012	6	1+	30	Neg	Neg	Normal	1+	1+	1.013

Neg = Negative

N/A = Not Applicable

Tables formatted for clarity

Extent of Renal Damage Prior to Dialysis
Toxikon Project # 11-5203-N1
AKI Therapeutic Trials

Group 1			
Animal #	Blood Collection Time Point	CREAT (mg/dL)	BUN (mg/dL)
7X214*	Pre-Surgery	0.90	19
	Pre-Dialysis		
	Increase	N/A	N/A
6X214*	Pre-Surgery	1.00	20
	Pre-Dialysis		
	Increase	N/A	N/A
2X95*	Pre-Surgery	0.70	20
	Pre-Dialysis		
	Increase	N/A	N/A
3X224*	Pre-Surgery	0.80	14
	Pre-Dialysis		
	Increase	N/A	N/A
A1221†*	Pre-Surgery	0.80	14
	Pre-Dialysis		
	Increase	N/A	N/A
21342	Pre-Surgery	0.72	14.0
	Pre-Dialysis		
	Increase	N/A	N/A

Tables formatted for clarity

† Animal was sacrificed early.

*Animal was tested as a part of Project #10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

Grey = No data collected due to dialysis not being performed.

Group 2			
Animal #	Blood Collection Time Point	CREAT (mg/dL)	BUN (mg/dL)
1171	Pre-Surgery	0.70	11
	Pre-Dialysis	4.10	48
	Increase	5.86	4.36
9X245	Pre-Surgery	0.60	15
	Pre-Dialysis	3.40	52
	Increase	5.67	3.47
1X323	Pre-Surgery	0.70	16
	Pre-Dialysis	3.80	57
	Increase	5.43	3.56
91117	Pre-Surgery	0.70	13
	Pre-Dialysis	3.70	52
	Increase	5.29	4.00
51177	Pre-Surgery	0.60	16
	Pre-Dialysis	4.00	64
	Increase	6.67	4.00
31252	Pre-Surgery	0.60	19
	Pre-Dialysis	4.30	79
	Increase	7.17	4.16
41267	Pre-Surgery	0.80	18
	Pre-Dialysis	5.30	80
	Increase	6.63	4.44
51150	Pre-Surgery	1.20	26
	Pre-Dialysis	7.80	94
	Increase	6.50	3.62
51174	Pre-Surgery	0.90	19
	Pre-Dialysis	4.40	60
	Increase	4.89	3.16
31290	Pre-Surgery	0.70	13
	Pre-Dialysis	3.80	52
	Increase	5.43	4.00

Group 3			
Animal #	Blood Collection Time Point	CREAT (mg/dL)	BUN (mg/dL)
6179	Pre-Surgery	1.10	14
	Pre-Dialysis	3.80	39
	Increase	3.45	2.79
2177	Pre-Surgery	0.90	15
	Pre-Dialysis	3.20	56
	Increase	3.56	3.73
21136	Pre-Surgery	0.90	13
	Pre-Dialysis	4.20	45
	Increase	4.67	3.46
31136	Pre-Surgery	0.70	20
	Pre-Dialysis	4.10	64
	Increase	5.86	3.20
51267	Pre-Surgery	0.70	13
	Pre-Dialysis	4.70	69
	Increase	6.71	5.31
11150	Pre-Surgery	0.90	22
	Pre-Dialysis	5.10	60
	Increase	5.67	2.73
11154	Pre-Surgery	0.70	16
	Pre-Dialysis	4.70	69
	Increase	6.71	4.31
61319	Pre-Surgery	0.80	14
	Pre-Dialysis	5.80	82
	Increase	7.25	5.9
51322	Pre-Surgery	0.70	14
	Pre-Dialysis	8.40	56
	Increase	12.00	4.00
4292	Pre-Surgery	0.70	16
	Pre-Dialysis	4.90	68
	Increase	7.00	4.25
9292	Pre-Surgery	0.60	14
	Pre-Dialysis	3.40	64
	Increase	5.67	4.57

Individual Gross Pathology Observations

Toxikon Project #: 11-5203-N1

AKI Therapeutic Trials

Group	Animal #	Necropsy Findings
Group 1	7x214*	No additional findings beyond condition of kidney which appeared normal.
	6x214*	Surface of kidney appeared mottled with no other tissue findings.
	2x95*	At necropsy, catheter was noted to have protruded through the implanted jugular vessel during the course of the study. Kidney appears to have a significant level of damage. No other tissue findings.
	3x224*	Small intestine appeared inflamed and cortex of kidney appear damaged with no other tissue findings.
	A1121*	Small intestine appeared dark red in color and inflamed. Kidney was a mustard color with a significantly damaged cortex with no other tissue findings.
	21342	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
Group 2	1171	Cortex of kidney appeared damaged with no other tissue findings
	9x245	Cortex of kidney appeared damaged with no other tissue findings
	1x323	Cortex of kidney appeared slightly damaged with no other tissue findings
	91117	Cortex of kidney appeared slightly damaged with no other tissue findings
	51177	Surface and Cortex of kidney appeared to be moderately discolored with no other tissue findings
	31252	Surface of kidney appears mottled red and cortex has slight discoloration with no other tissue findings
	41267	Surface and cortex of kidney appeared to be moderately discolored and portions of the small intestine appeared discolored dark red. No other tissue findings.
	51150	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
	51174	Surface and cortex of kidney appeared to be mildly discolored with no other tissue findings
	31290	Kidney appears normal
Group 3	6179	Cortex of kidney appeared damaged with no other tissue findings
	2177	Cortex of kidney appeared slightly damaged with no other tissue findings
	21136	Surface of kidney appeared to have slight discoloration with the interior appearing normal except for two locations of blanched tissue in the cortex. No other tissue findings.
	31136	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
	51267	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
	11150	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
	11154	Surface and cortex of kidney appeared to be mildly discolored with no other tissue findings
	61319	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
	51322	Surface and cortex of kidney appeared to be mildly discolored with no other tissue findings
	4292	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings
	9292	Surface and cortex of kidney appeared to be moderately discolored with no other tissue findings

*Animal was tested as a part of Project #10-2996-N1 and is included in the current study (11-5203-N1) per Sponsor request.

Most observations made based on photographic evidence

Tables formatted for clarity



AKI Therapeutic Trials

DRAFT Non-GLP Report: 11-5203-N1

Test Article: Sentinel-001AKI

ATTACHMENT B
Pathology Reports and Microscopic Observations

*This document expires 45 days from the date of issue. If comments are not received, the report will be re-issued as a final report.
Any changes to a final report will result in an amendment at an additional cost to the client.*

DRAFT REPORTS ARE NOT TO BE USED FOR SUBMISSION PURPOSES TO ANY REGULATORY AGENCY

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

SUMMARY:

In animals #4x196 and #4x206 (dialysis w/and w/o cell group), there were no findings in all sections. In animals # 1x224 and #3x221(cath imp, nephrectomy and artery, vein, ureter clamp group), there were slight tubular necrosis, cast deposition, dilated tubule with hyaline cast, mineralization along with tubular degeneration but no inflammatory cell infiltration. In animals #7x214, #2x95 and #6x214 (cath imp, nephrectomy and artery, vein clamp group); there was moderate injury in tubules with a slight inflammatory infiltrate in animal #2x95, a lesser degree in animal #7x214 and no inflammatory infiltrate in animal #6x214

Respectfully submitted,

Ying Ping Yu, B.M., Pathology Associate
Pathology Reviewer

7/8/11

Alexander G. Richter, MS, DVM, DACVP
Pathology Approver

7-8-11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 10-2996-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathology Reviewer: Ying Ping Yu
Pathology Approver: Dr. Richter

Special Considerations: None

Categories of Reaction	ANIMAL # 2X95																			
	Slide #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Inflammation																				
**Eosinophil/Neutrophil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
**Lymphocytes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Macrophages	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
**Giant Cells	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Necrosis/Abscess	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O
**Fibrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tubular																				
Brush Border Loss/Necrosis	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Cast Deposition	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Dilation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mineralization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Degeneration	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Total	9	10	10	10	10	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10

Total Score (Average of Totals) = 9.3

0 = Normal	1 = Slight injury	2 = Mild injury	3 = Moderate injury	4 = Marked injury	5 = Severe injury	NP=Not Present
S=Small amount	M=Moderate amount	L=Large amount				
** Score	0=<5 cells/x400 field	1=>5 cells /x400 field	2=>20/x400 field	3=>40 cell/x400 field	4=>60 cells /x400 field	

Comments:

There wqs Bowman's capsular pinkish material at some glomerulus

Pathology Reviewer:

Date:

7/8/11

Pathology Approver:

Date:

7-8-11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 10-2996-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathology Reviewer: Ying Ping Yu
 Pathology Approver: Dr. Richter

Special Considerations: None

Categories of Reaction	ANIMAL # 6X214																				
	Slide #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Inflammation																					
**Eosinophil/Neutrophil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Lymphocytes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Macrophages	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Giant Cells	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Necrosis/Abscess	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O	P/O
**Fibrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tubular																					
Brush Border Loss/Necrosis	1	2	2	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
Cast Deposition	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dilation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mineralization	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Degeneration	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Total	3	3	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	

Total Score (Average of Totals) = 3.6

0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 S=Small amount M=Moderate amount L=Large amount
 ** Score 0=<5 cells/x400 field 1=>5 cells /x400 field 2=>20/x400 field 3=>40 cell/x400 field 4=>60 cells /x400 field

Comments:

Pathology Reviewer:

Date: 7/18/11

Pathology Approver:

Date: 7-18-11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 10-2996-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathology Reviewer: Ying Ping Yu
 Pathology Approver: Dr. Richter

Special Considerations: None

Categories of Reaction	ANIMAL # 7X214																			
	Slide #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Inflammation																				
**Eosinophil/Neutrophil	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
**Lymphocytes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Macrophages	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
**Giant Cells	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Necrosis/Abscess	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tubular																				
Brush Border Loss/Necrosis	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Cast Deposition	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dilation	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1
Mineralization	0	0	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0
Degeneration	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Total	3	4	4	2	2	3	5	3	2	2	2	1	2	3	2	1	2	2	4	4

Total Score (Average of Totals) = 2.5

0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 S=Small amount M=Moderate amount L=Large amount
 ** Score 0=<5 cells/x400 field 1=>5 cells /x400 field 2=>20/x400 field 3=>40 cell/x400 field 4=>60 cells /x400 field

Comments:

Pathology Reviewer:

Date: 7/8/11

Pathology Approver:

Date: 7-8-11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

SUMMARY:

The most relevant microscopic findings in these kidneys are the tubular necrosis and mineralization detected in all examined sections. The latter changes are more prominent in animal # A1221 compared to animal # 3X224. There is minimal inflammation in animal # A1221 mainly localized to the pelvic region (sections #9, 10, 11, 12 and 14). The latter change is considered incidental and likely unrelated to the procedure. Only one section (section #7) shows a microabscess which is likely consequent to the tubular necrosis. Animal # 3X224 exhibit more inflammation compared to animal # A1221, and is likely related to tubular necrosis.

CONCLUSION

Respectfully submitted,

Raffaele Melidon
Pathology Reviewer

Raffaele Melidon 8/31/2011

Alexander G. Richter, MS, DVM, DACVP
Pathology Approver

A. G. Richter 8-31-11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 10-2996-N1
 Sponsor: Sentien Biotechnologies, Inc.

Special Considerations: None

Pathology Reviewer: Raffaele Melidon
 Pathology Approver: Dr. Richter

Categories of Reaction	ANIMAL # A1221																				
	Slide #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Inflammation																					
**Eosinophil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Lymphocytes	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0
**Macrophages	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Giant Cells	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Abscess/neutrophils	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
**Congestion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Hemorrhage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tubular/Glomerular																					
Brush Border Loss/Necrosis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Cast Deposition	4	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	3	4	4
Dilation	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2
Mineralization	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1
Degeneration/ necrosis tubular	3	3	3	3	3	3	4	4	4	3	4	4	4	4	4	4	4	4	3	4	4
Glomerular PAS deposits	2	2	2	2	2	1	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2
Total	16	17	16	16	17	15	18	17	18	16	18	17	16	18	17	17	18	17	15	17	

Total Score (Average of Totals) =

16.0

0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 S=Small amount M=Moderate amount L=Large amount

**Score 1: > 5 2: > 20 3: > 40 4: > 60

Comments:

N/A

Pathology Reviewer:

Raffaele Melidon
R Richter

Pathology Approver:

Date: 8/31/2011

Date: 8/31/11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 10-2996-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathology Reviewer: Raffaele Melidone
 Pathology Approver: Dr. Richter

Special Considerations: None

Categories of Reaction	ANIMAL # 3X224																			
	Slide #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
**Inflammation																				
**Eosinophil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Lymphocytes	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1
**Macrophages	0	0	1	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Abscess/neutrophils	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
**Congestion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Hemorrhage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tubular/Glomerular																				
Brush Border Loss/Necrosis	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	1	2	2
Cast Deposition	2	2	2	2	2	3	2	2	1	1	1	2	2	2	2	1	2	2	3	2
Dilation tubular	2	2	2	2	2	1	2	2	2	2	1	2	2	2	2	1	2	2	1	2
Mineralization tubular	2	1	2	2	3	2	2	2	2	3	1	2	2	2	2	2	2	2	1	2
Degeneration/necrosis tubular	2	2	2	2	2	3	2	1	2	2	1	1	2	2	2	2	2	2	1	2
Glomerular PAS stain	2	2	2	2	2	2	2	1	2	2	1	2	2	2	2	2	1	2	1	2
Total	12	11	15	13	15	14	12	14	12	12	10	10	14	13	14	13	14	15	11	15

Total Score (Average of Totals) = 12.3

0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 S=Small amount M=Moderate amount L=Large amount

**Score 1: > 5 2: > 20 3: > 40 4: > 60

Comments:

N/A

Pathology Reviewer:

Raffaele Melidone
 DR Richter

Pathology Approver:

Date: 8/31/2011

Date: 8-31-11

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 51177							
	Slide #	1	2	3	4	5	6	7
Inflammation								
**Neutrophil	2	2	1	1	1	1	1	1
**Eosinophils	0	0	0	0	0	0	0	0
**Lymphocytes	3	3	3	3	2	2	3	2
**Macrophages	1	2	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0
Tubular								
†Brush Border Loss/Necrosis	4	4	1	4	4	4	4	4
†Cast Deposition	L	M	S	L	M	M	S	M
†Dilation	L	L	S	M	M	M	L	M
†Mineralization	M	M	0	M	M	M	S	S
†Degeneration	4	4	1	4	3	4	4	4
Total	14	15	7	13	11	12	13	12

Total Score (Average of Totals) = 12.1

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present

†Score S=Small amount M=Moderate amount L=Large amount

** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: 11/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 21136							
	Slide #	1	2	3	4	5	6	7
**Inflammation:								
**Neutrophil	0	0	0	1	1	1	0	0
**Eosinophil	1	1	1	0	1	0	1	0
**Lymphocytes	3	3	3	3	3	3	3	3
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0
Tubular:								
†Brush Border Loss/Necrosis	0	1	1	1	1	2	1	1
†Cast Deposition	S	S	S	S	S	S	S	S
†Dilation	S	S	S	S	S	S	S	S
†Mineralization	S	S	S	S	S	M	S	S
†Degeneration	0	1	1	1	1	2	1	0
Total	5	7	7	7	8	9	7	5

Total Score (Average of Totals) = 6.9

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: 11/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
 Sponsor: Sentien Biotechnologies, Inc.
 Special Considerations: None

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Categories of Reaction	ANIMAL # 91117							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	1	0	0	0	0	0	0
**Eosinophil	0	1	0	0	0	0	0	0
**Lymphocytes	3	3	2	3	3	3	3	3
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	1	1
Tubular								
†Brush Border Loss/Necrosis	1	1	1	2	2	2	2	2
†Cast Deposition	S	S	S	S	S	S	S	S
†Dilation	M	S	S	M	M	M	M	M
†Mineralization	S	S	S	S	S	S	S	S
†Degeneration	1	1	1	2	2	2	2	2
Total	6	8	5	8	8	8	9	9

Total Score (Average of Totals) = 7.6

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: Raffele Melidone

Date: 11/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 1X323							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	1	0	0	0	1	1	0
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	2	3	3	2	2	3	3	3
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0
Tubular								
†Brush Border Loss/Necrosis	1	1	1	1	1	1	1	1
†Cast Deposition	S	S	S	S	S	S	S	S
†Dilation	S	M	S	S	S	S	S	S
†Mineralization	S	S	S	S	S	S	S	S
†Degeneration	1	1	1	1	1	1	1	1
Total	5	7	6	5	5	7	7	6

Total Score (Average of Totals) = 6.0

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present

†Score S=Small amount M=Moderate amount L=Large amount

** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: 1/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 1171							
	Slide #	1	2	3	4	5	6	7
*Inflammation								
**Neutrophil	1	1	1	2	1	2	2	2
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	4	4	4	4	4	4	4	4
**Macrophages	2	2	2	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	2	2	2	3	2	2	2	3
Tubular								
†Brush Border Loss/Necrosis	4	5	4	5	4	4	4	5
†Cast Deposition	S	S	S	S	S	S	S	S
†Dilation	M	M	M	M	M	M	M	M
†Mineralization	L	L	L	L	L	L	L	L
†Degeneration	4	5	4	4	4	4	4	5
Total	17	19	17	19	16	17	17	20

Total Score (Average of Totals) = 17.8

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present

†Score S=Small amount M=Moderate amount L=Large amount

** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone

Date: 11/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 9X245							
	Slide #	1	2	3	4	5	6	7
*# Inflammation								
**Neutrophil	0	1	0	0	0	0	0	0
**Eosinophil	1	0	1	0	0	0	1	0
**Lymphocytes	2	2	3	3	2	3	3	3
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	1	1
Tubular								
Brush Border Loss/Necrosis	1	1	1	1	1	1	1	1
Cast Deposition	S	S	S	S	S	S	S	S
Dilation	S	S	S	S	S	S	M	M
Mineralization	S	S	S	S	S	S	S	S
Degeneration	1	1	1	1	1	1	1	1
Total	6	6	7	6	5	6	8	7

Total Score (Average of Totals) = 6.4

†Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
†Score S=Small amount M=Moderate amount L=Large amount

** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone Date: 1/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 6179							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	0	0	0	0	0	0	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	4	3	3	3	2	2	2	2
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	1	1	1	1	1	1	1	1
Tubular								
Brush Border Loss/Necrosis	4	3	3	3	3	3	3	3
Cast Deposition	M	S	S	S	S	S	S	M
Dilation	L	M	M	M	M	M	M	M
Mineralization	L	M	M	L	M	M	M	M
Degeneration	3	2	2	2	2	2	2	2
Total	13	10	10	10	9	9	9	10

Total Score (Average of Totals) = 10.0

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone Date: 1/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 2177							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	1	0	1	1	1	1	1
**Eosinophil	1	1	1	1	1	1	2	1
**Lymphocytes	3	3	3	3	3	3	3	3
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	1	0	0
Tubular								
†Brush Border Loss/Necrosis	1	1	1	1	1	1	1	1
†Cast Deposition	S	S	S	S	S	S	S	S
†Dilation	0	S	S	S	S	S	S	S
†Mineralization	0	0	S	0	0	S	0	0
†Degeneration	0	1	1	1	1	1	2	1
Total	6	8	7	8	8	9	10	8

Total Score (Average of Totals) = 8.0

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score O=Not present I=Minimal amounts 2=Mild amounts 3=>40 cell/x400 field 4=Large amounts

Comments:

Pathologist:

Raffele Melidone

Date:

1/16/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 51267							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	1	0	1	1	0	1	0	0
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	3	3	3	2	2	2	2	2
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	1	1	1	1	2	2	1
Tubular								
†Brush Border Loss/Necrosis	2	3	3	4	4	4	4	3
†Cast Deposition	S	M	M	M	M	M	M	M
†Dilation	L	L	L	L	L	L	L	M
†Mineralization	S	M	M	L	L	L	M	M
†Degeneration	2	4	4	4	3	4	4	3
Total	9	12	13	13	11	14	13	10

Total Score (Average of Totals) = 11.9

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: 11/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 41267							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	0	0	1	0	0	1	0
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	2	2	2	2	2	2	2	2
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	1	1	1	2	1	1	1
Tubular								
†Brush Border Loss/Necrosis	3	3	3	3	3	4	3	4
†Cast Deposition	M	M	M	M	M	M	M	M
†Dilation	M	M	M	M	M	M	M	M
†Mineralization	M	M	M	M	M	M	M	M
†Degeneration	3	3	3	3	4	4	3	4
Total	9	10	10	11	12	12	11	12

Total Score (Average of Totals) = 10.9

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: *1/10/2013*

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 31136							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	1	1	1	1	1	1	1
**Eosinophil	0	0	0	0	1	1	1	0
**Lymphocytes	2	3	2	3	3	3	3	4
**Macrophages	0	1	1	1	1	1	1	1
**Giant Cells	1	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0
Tubular								
†Brush Border Loss/Necrosis	1	2	1	2	2	2	2	2
†Cast Deposition	S	S	S	S	S	S	M	M
†Dilation	S	M	M	M	M	M	M	M
†Mineralization	S	S	S	S	S	S	S	S
†Degeneration	1	2	1	2	2	2	2	2
Total	5	9	6	9	10	10	10	10

Total Score (Average of Totals) = 8.6

†Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury
 †Score S=Small amount M=Moderate amount L=Large amount 5 = Severe injury NP=Not Present
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: Raffele Melidone Date: 11/10/2013

TOXIKON

MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 31252.							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	0	0	1	0	1	1	0
**Eosinophil	0	1	0	1	1	0	1	1
**Lymphocytes	3	3	3	4	4	4	4	4
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	1	0	0	0	0	0	0	0
Tubular								
†Brush Border Loss/Necrosis	3	3	3	4	4	4	4	4
†Cast Deposition	M	M	M	L	M	M	M	L
†Dilation	M	M	M	L	L	M	L	M
†Mineralization	M	M	M	L	M	M	M	M
†Degeneration	3	3	3	4	4	4	4	4
Total	11	11	10	15	14	14	15	14

Total Score (Average of Totals) = 13.0

†Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
†Score S=Small amount M=Moderate amount L=Large amount

** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone Date: 1/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
 Sponsor: Sentien Biotechnologies, Inc.
 Special Considerations: None

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Categories of Reaction	ANIMAL # 51150							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	1	2	1	0	2	0	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	1	1	1	1	1	1	1	1
**Macrophages	0	1	0	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	1	1	0	0	0	1	1	1
Tubular								
†Brush Border Loss/Necrosis	4	3	3	4	3	3	3	3
†Cast Deposition	L	L	M	L	L	M	M	M
†Dilation	S	S	S	S	S	S	S	S
†Mineralization	M	M	M	L	M	M	M	M
†Degeneration	4	3	3	4	3	3	3	3
Total	10	10	9	11	8	11	9	10

Total Score (Average of Totals) = 9.8

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: *1/10/2013*

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 11150							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	3	3	3	3	2	2	2	2
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	1	1	1	1	1	1	2	1
**Macrophages	1	1	1	1	2	3	2	2
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	2	2	2	2	2	2	2	2
Tubular								
†Brush Border Loss/Necrosis	4	5	5	4	5	4	5	5
†Cast Deposition	L	L	L	L	L	L	L	L
†Dilation	M	M	M	M	M	M	M	M
†Mineralization	M	M	M	M	M	M	M	M
†Degeneration	4	5	5	5	5	5	5	5
Total	15	17	17	16	17	17	18	17

Total Score (Average of Totals) = 16.8

†Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: 11/10/2013

TOXIKON

MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 11154							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	1	1	2	2	1	2	2	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	1	1	1	1	1	1	1	1
**Macrophages	1	1	1	1	0	1	1	0
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	1	1	1	0	0	1	0
Tubular								
†Brush Border Loss/Necrosis	2	3	2	2	1	1	2	1
†Cast Deposition	S	S	M	S	S	S	S	S
†Dilation	S	S	S	S	S	S	S	S
†Mineralization	S	M	M	M	M	M	M	S
†Degeneration	2	3	2	2	2	2	2	1
Total	7	10	9	9	5	7	9	4

Total Score (Average of Totals) = 7.5

†Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone

Date: 11/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
 Sponsor: Semien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 51174							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	1	1	1	1	1	1	1	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	3	3	2	3	3	3	.3	3
**Macrophages	3	3	3	3	3	3	3	2
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	.0	0
**Fibrosis	1	2	2	2	2	2	2	2
Tubular								
†Brush Border Loss/Necrosis	1	2	1	2	2	2	2	1
†Cast Deposition	S	M	S	S	S	M	M	S
†Dilation	S	M	M	M	S	S	M	S
†Mineralization	S	S	S	S	S	S	S	S
†Degeneration	1	1	1	1	1	1	2	2
Total	10	12	10	12	12	12	13	11

Total Score (Average of Totals) = 11.5

†Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone

Date: 1/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
MICROSCOPIC OBSERVATIONS

Project #: 11-5203-N1
Sponsor: Sentient Biotechnologies, Inc.

Pathologist: Raffaele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 61319							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	1	1	1	1	1	1	1	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	1	1	1	1	1	1	1	1
**Macrophages	0	0	0	0	0	0	0	0
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	1	1	1	1	1	1	1	1
Tubular								
†Brush Border Loss/Necrosis	4	4	4	4	4	4	4	4
†Cast Deposition	M	M	M	M	M	M	M	M
†Dilation	S	S	S	S	S	S	S	S
†Mineralization	M	L	L	L	L	M	L	
†Degeneration	5	4	4	5	5	5	5	5
Total	12	11	11	12	12	12	12	12

Total Score (Average of Totals) = 11.8

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present l=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: Raffaele Melidone

Date: 11/10/2013

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Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 31290							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	0	0	0	0	0	0	0
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	0	0	0	0	0	0	0	0
**Macrophages	0	0	0	0	0	0	0	0
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	0	0	0	0	0	0	0	0
Tubular								
†Brush Border Loss/Necrosis	1	1	1	1	1	1	1	1
†Cast Deposition	M	M	M	M	L	M	M	M
†Dilation	S	S	S	S	S	S	S	S
†Mineralization	S	S	S	S	S	S	S	S
‡Degeneration	1	1	2	2	2	2	2	2
Total	2	2	3	3	3	3	3	3

Total Score (Average of Totals) = 2.8

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

This animal (#31290) was euthanized 41 hours after the surgical procedure because of an history of seizure, vomiting, diarrhea and lethargy. The early euthanasia it is the likely cause of the lack of significant lesions within these kidneys. Sections of the liver and spleen were also collected in this animal. The liver showed mild multifocal segmental capsular early fibrosis with neutrophilic infiltrate and mild multifocal centrilobular hepatocellular cords rarefaction and thinning with mild multifocal mononuclear (mainly lymphocytes) infiltrate. A few segmental deposits of fibrin/early fibrous tissue are present on the spleen capsule. The fibrin/early fibrous tissue detected on the capsule of both liver and kidney may be consequent to the surgical procedure. The centrilobular hepatocellular cords rarefaction and thinning may be a sign of hypoxia.

Pathologist: *Raffele Melidone* Date: 1/10/2013

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Project #: 11-5203-N1
Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 4292							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	1	0	0	1	1	0	1	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	2	2	2	2	2	2	2	2
**Macrophages	0	0	0	0	0	0	0	0
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	2	2	3	3	3	3	3	3
Tubular								
†Brush Border Loss/Necrosis	3	3	3	3	3	3	3	3
†Cast Deposition	M	M	M	M	M	M	M	M
†Dilation	M	M	M	S	S	S	M	M
†Mineralization	M	M	M	M	M	M	M	M
†Degeneration	3	3	3	3	3	3	3	3
Total	11	10	11	12	12	11	12	12

Total Score (Average of Totals) = 11.4

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone*

Date: 1/10/2013

TOXIKON
MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
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Project #: 11-5203-N1
 Sponsor: Sentien Biotechnologies, Inc.

Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL #9292							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	0	0	0	0	0	0	0
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	2	2	2	2	1	2	2	2
**Macrophages	1	1	1	1	0	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	1	1	1	1	1	1	1	1
Tubular								
†Brush Border Loss/Necrosis	2	2	2	2	1	2	2	3
†Cast Deposition	S	S	S	S	S	S	S	M
†Dilation	M	M	M	M	S	M	M	M
†Mineralization	S	S	S	S	S	S	M	M
†Degeneration	1	1	1	1	1	1	2	2
Total	7	7	7	7	4	7	8	9

Total Score (Average of Totals) = 7.0

‡Score 0 = Normal 1 = Slight injury 2 = Mild injury 3 = Moderate injury 4 = Marked injury 5 = Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist:

Raffele Melidone

Date:

11/10/2013

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ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
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Project #: 11-5203-N1
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Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # 21342							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	3	4	3	4	4	4	3	3
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	3	2	3	2	2	2	2	3
**Macrophages	1	1	1	1	1	1	1	1
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	2	1	2	1	2	2	2	2
Tubular								
†Brush Border Loss/Necrosis	3	3	3	3	3	3	3	3
†Cast Deposition	S	S	M	S	M	S	S	S
†Dilation	M	S	M	M	M	S	S	S
†Mineralization	L	L	L	M	M	M	L	M
‡Degeneration	4	4	4	4	4	4	3	4
Total	16	15	16	15	16	16	14	16

Total Score (Average of Totals) = 15.5

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present
 †Score S=Small amount M=Moderate amount L=Large amount
 ** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: *Raffele Melidone* Date: 11/10/2013

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MESENCHYMAL STEM CELL BIOREACTOR FOR TREATMENT OF
ACUTE ORGAN INJURY IN DOGS ISCHEMIA REPERFUSION STUDY
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Project #: 11-5203-N1
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Pathologist: Raffele Melidone, Dr. Med. Vet., Diplomate ACVP

Special Considerations: None

Categories of Reaction	ANIMAL # S1322							
	Slide #	1	2	3	4	5	6	7
**Inflammation								
**Neutrophil	0	1	1	1	0	1	1	1
**Eosinophil	0	0	0	0	0	0	0	0
**Lymphocytes	2	2	2	2	2	2	2	2
**Macrophages	1	0	0	1	1	1	0	0
**Giant Cells	0	0	0	0	0	0	0	0
**Congestion/Hemorrhage	0	0	0	0	0	0	0	0
**Fibrosis	1	1	1	1	1	2	1	1
Tubular								
‡Brush Border Loss/Necrosis	2	3	2	2	2	2	2	2
†Cast Deposition	M	M	M	M	S	M	M	M
†Dilation	M	M	M	M	M	M	M	L
†Mineralization	S	M	S	S	S	S	S	S
†Degeneration	1	1	1	2	1	2	1	2
Total	7	8	7	9	7	10	7	8

Total Score (Average of Totals) = 7.9

‡Score 0=Normal 1=Slight injury 2=Mild injury 3=Moderate injury 4=Marked injury 5=Severe injury NP=Not Present

†Score S=Small amount M=Moderate amount L=Large amount

** Score 0=Not present 1=Minimal amounts 2=Mild amounts 3=Moderate amounts 4=Large amounts

Comments:

Pathologist: Raffele Melidone

Date: 11/10/2013