Materials List for:

Optogenetic Entrainment of Hippocampal Theta Oscillations in Behaving Mice

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Materials

Name	Company	Catalog Number	Comments
PV-Cre mice	The Jackson Laboratory	B6;129P2-Pvalbtm1(cre)Arbr/J	
Name	**Company**	**Catalog Number**	**Comments**
Surgery			
Stereotaxis	David Kopf Instruments, Tujunga, CA, USA	Model 963	Ultra Precise Small Animal Stereotaxic Instrument
Drill bits, 0.8 mm	Bijoutil, Allschwil, Switzerland	49080HM	
0.01-1 ml syringe	Braun, Melsungen, Germany	9161406V	
Sterican cannulas	Braun	26 G, 0.45x25 mm BL/LB	
Fine and sharp scissors	Fine Science Tools Inc., Vancouver, Canada	14060-09	
Forceps	Fine Science Tools Inc.	11210-10	Dumont AA - Epoxy Coated Forceps
Blunt stainless steel scissors	Fine Science Tools Inc.	14018-14	
Soldering station	Weller Tools GmbH, Besigheim, Germany	WSD 81	
Erythromycin	Rotexmedica GmbH, Trittau, Germany	PZN: 10823932	1g Powder for Solution for Infusion
Name	**Company**	**Catalog Number**	**Comments**
Optogenetics			
Hamilton pump	PHD Ultra, Harvard Apparatus, Holliston, MA, USA	model 703008	PHD Ultra Syringe Pump with push/pull mechanism
Hamilton 5 µL Syringe, 26 gauge	PHD Ultra, Harvard Apparatus	Model 75 RN SYR	
Hamilton 5 µL Plunger	PHD Ultra, Harvard Apparatus	Model 75 RN SYR	
Tubing	Fisher Scientific, Pittsburgh, USA	PE 20	Inner diameter 0.38 mm (.015"), Outer diameter 1.09 mm (.043")
Sterican cannulas	Braun, Melsungen, Germany	27 G, 25x0.40 mm, blunt	
Precision drill/grinder	Proxxon, Wecker, Luxemburg	fbs 240/e	
Cutting disks	Proxxon	NO 28812	
Cre dependent channelrhodopsin	Penn Vector Core, Philadelphia, PA, USA	AV-1-18917P	Contruct name: AAV2/1.CAGGS.flex.ChR2.tdTomato, titer: 1.42x1013 vg/ml
Cam kinase dependent halorhodopsin	Penn Vector Core	AV-1-26971P	Construct name: eNpHR3.0, AAV2/1.CamKIIa.eNpHR3.0-EYFP.WPRE.hGH, titer: 2.08_1012 vg/ml
Multimode optic fiber	ThorLabs, Dachau, Germany	FG105LCA	0.22 NA, Low-OH, Ø105 µm Core, 400 - 2400 nm

Ceramic stick ferrule	Precision Fiber Products, Milpitas, CA, USA	CFLC126	Ceramic LC MM Ferrule, ID 126um
Polishing paper	Thorlabs	LF3D	6" x 6" Diamond Lapping (Polishing) Sheet
Power meter	Thorlabs	PM100D	Compact Power and Energy Meter Console, Digital 4" LCD
Multimode fiber optic coupler	Thorlabs	FCMM50-50A-FC	1x2 MM Coupler, 50:50 Split Ratio, 50 µm GI Fibers, FC/PC
Fiberoptic patch cord	Thorlabs	FG105LCA CUSTOM-MUC	custom made, 3 m long, with protective tubing, Tubing: FT030, Connector 1: FC/PC, Connector 2: 1.25mm (LC) Ceramic Ferrule
Sleeve	Precision Fiber Products, Milpitas, CA, USA	ADAL1	Ceramic Split Mating Sleeve for Ø1.25 mm (LC/PC) Ferrules
473 nm DPSS laser	Laserglow Technologies, Toronto, ON, Canada	R471005FX	LRS-0473 Series
593 nm DPSS laser	Laserglow Technologies	R591005FX	LRS-0594 Series
MC_Stimulus II	Multichannel Systems, Reutlingen, Germany	STG 4004	
Impedance conditioning module	Neural microTargeting worldwide, Bowdoin, USA	ICM	
Name	**Company**	**Catalog Number**	**Comments**
<u>Electrophysiology</u>			
Tungsten wires	California Fine Wire Company, Grover Beach, CA, USA	CFW0010954	40 µm, 99.95%
Capillary tubing	Optronics	1068150020	ID: 100.4 µm
Omnetics nanoconnector	Omnetics Connector Corporation, Minneapolis, USA	A79038-001	
Screws	Bilaney, Düsseldorf, Germany	00-96x1/16	stainless-steel
Silicone probe	NeuroNexus Technologies, Ann Arbor, MI, USA	B32	
Headstage	Neuralynx, Bozeman, Montana USA	HS-8	miniature headstage unity gain preamplifiers
Silver conductive paint	Conrad electronics, Germany	530042	
Liquid flux	Felder GMBH Löttechnik, Oberhausen, Germany	Lötöl ST	DIN EN 29454.1, 3.2.2.A (F-SW 11)
LED	Neuralynx	HS-LED-Red-omni-10V	
Name	**Company**	**Catalog Number**	**Comments**
<u>Software</u>			
MATLAB	Mathworks, Natick, MA, USA		
MC_Stimulus software	Multichannel, Systems		
Neurophysiological Data Manager			NDManager, http://neurosuite.sourceforge.net
Klusters			http://neurosuite.sourceforge.net, Hazan et al., 2006
Software of the recording system	Neuralynx	Cheetah	https://neuralynx.com/software/cheetah
Multi-channel data analysis software	Cambridge Electronic Design Limited, Cambridge, GB	Spike2	