

Materials List for:

Optogenetic Manipulation of Neural Circuits During Monitoring Sleep/wakefulness States in Mice

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Materials

Name	Company	Catalog Number	Comments
1x1 Fiber-optic Rotary Joints	Doric	FRJ 1x1 FC-FC	for optogenetics
6-pin header	KEL corporation	DSP02-006-431G	
6-pin socket	Hirose	21602X3GSE	
A/D converter	Nippon koden	N/A	Analog to digital converter
AAV ₁₀ -EF1a-DIO-ChR2-EYFP			3.70×10 ¹³ (genomic copies/ml)
AAV ₁₀ -EF1a-DIO-EYFP			5.82×10 ¹³ (genomic copies/ml)
Ampicillin	Fuji film	014-23302	
Amplifier	Nippon koden	N/A	for EEG/EMG recording
Anesthetic vaporizer	Muromachi	MK-AT-210D	
Automatic injector	KD scientific	780311	
Carbide cutter	Minitor	B1055	φ0.7 mm. Referred as dental drill, used with high speed rotary micromotor
Cyanoacrylate adhesion (Aron alpha A) and acceleration	Konishi	#30533	
Dental curing light	3M	Elipar S10	
Epoxy adhesive	Konishi	#04888	insulation around the solder of 6-pin and shielded cable
Fiber optic patch cord (branching)	Doric	BFP(#)_50/125/900-0.22	
Gad67-Cre mice	provided by Dr. Kenji Sakimura		Cre recombinase gene is knocked-in in the Gad67 allele
Hamilton syringe	Hamilton	65461-01	
High speed rotary micromotor kit	FOREDOM	K.1070	Used with carbide cutter
Interconnecting sleeve	Thorlab	ADAF1	φ2.5 mm Ceramic
Isoflurane	Pfizer	871119	
Laser	Rapp OptoElectronic	N/A	473nm wave length
Laser intensity checker	COHERENT	1098293	
Laser stimulator	Bio research center	STO2	referred as pulse generator in text
Optic fiber with ferrule	Thorlab	FP200URT-CANNULA-SP-JP	
pAAV2-rh10	provided by PennVector Core		
pAAV-EF1a-DIO-EYFP-WPRE-HGHpA	Addgene	plasmid # 20296	
pAAV-EF1a-DIO-hChR2(H134R)-EYFP-WPRE-HGHpA	provided by Dr. Karl Deisseroth		

Patch cord	Doric	D202-9089-0.4	0.4m length, laser conductor between laser and rotary joint
pHelper	Stratagene		
Photocurable dental cement	3M	56846	
Serafin clamp	Stoelting	52120-43P	
Shielded cable	mogami	W2780	Soldering to 6-pin socket for EEG/EMG recording
Sleep recording chamber	N/A	N/A	Custum-made (21cm× 29cm × 19cm) with water tank holder
Sleep sign software	KISSEI COMTEC	N/A	for EEG/EMG analysis
Slip ring	neuroscience,inc	N/A	for EEG/EMG analysis
Stainless screw	Yamazaki	N/A	φ1.0 x 2.0
Stainless wire	Cooner wire	AS633	0.0130 inch diameter
Stereotaxic frame with digital console	Koph	N/A	Model 940
Syringe needle	Hamilton	7803-05	
Vital recorder software	KISSEI COMTEC	N/A	for EEG/EMG recording