

Using Optogenetics to Reverse Neuroplasticity and Inhibit Cocaine Seeking in Rats

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Citation

Rich, M.T., Huang, Y.H., Torregrossa, M.M. Using Optogenetics to Reverse Neuroplasticity and Inhibit Cocaine Seeking in Rats. *J. Vis. Exp.* (176), e63185, doi:10.3791/63185 (2021).

Date Published

October 5, 2021

DOI

10.3791/63185

URL

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Materials

Name	Company	Catalog Number	Comments
0.9% Saline	Fisher Scientific	NC0291799	
A.M.P.I. Stimulus Isolator	Iso-Flex		
AAV5.hSyn.oChIEF.tdTomato	Duke Viral Vector Core (via Roger Tsien)	#268	See Lin et al., 2009; Nabavi et al., 2014
AAV5.hSyn.tdTomato (Control)	Duke Viral Vector Core Control		See Lin et al., 2009; Nabavi et al., 2014
Artificial Tears (Ophthalmic Ointment)	Covetrus	70349	
ATP Magnesium Salt	Fisher Scientific	A9187	
Betadine	Butler Schein	38250	
Calcium chloride	Fisher Scientific	C1016	
Cesium chloride	Fisher Scientific	289329	
Cesium hydroxide	Fisher Scientific	516988	
Cesium methanesulfonate	Fisher Scientific	C1426	
Cocaine HCl	NIDA Drug Supply Center	9041-001	
Cryostat	Leica	CM1950	
D-Glucose	Sigma-Aldrich	G8270	
DMSO	Fisher Scientific	BP231-1	
Dual-Channel Temperature Controller	Warner Instruments	TC-344C	
EGTA	Fisher Scientific	E3889	
Ethanol	University of Pittsburgh Chemistry Stockroom	200C5000	
Ferrule Dust Caps	Thor Labs	CAPL	White plastic dust caps for 1.25 mm Ferrules
Ferrule Mating Sleeves	Doric Lenses	F210-3011	Sleeve_BR_1.25, Bronze, 1.25 mm ID
Ferrules	Precision Fiber Products	MM-FER2007C-2300	Ø1.25 mm Multimode LC/PC Ceramic ferrule, Ø230 µm hole size
Fiber Optic	Thor Labs	FP200URT	200 µm core multimode fiber (0.5 NA)
Fiber Optic Rotary Joint	Prizmatix	(Ordered from Amazon)	18 mm diameter, FC-FC connector for fiber

Fiber Stripping Tool	Thor Labs	T12S21	
Fluoroshield with DAPI	Sigma-Aldrich	F6057	
Gentamicin	Henry Schein	6913	
GTP Sodium Salt	Fisher Scientific	G8877	
Hamilton syringe	Hamilton	80085	10 μ L volume, 26 gauge, 2 inch, point style 3
Heat Gun	Allied Electronics	972-6966	250 V, 750-800 °F
Heat-Curable Epoxy	Precision Fiber Products	PFP-353ND-8OZ	
Heparin	Henry Schein	55737	
HEPES	Sigma-Aldrich	H3375	
Hydrochloric Acid	Fisher Scientific	219405490	
Isoflurane	Henry Schein	29405	
Ketamine HCl	Henry Schein	55853	Ketamine is a controlled substance and should be handled according to institutional guidelines
Lactated Ringer's	Henry Schein	9846	
Laser, driver, and laser-to-fiber coupler	OEM Laser Systems	BL-473-00100-CWM-SD-xx-LED-0	100 mW, 473-nm, diode-pumped solid-state laser (One option)
L-glutathione	Fisher Scientific	G4251	
Lidocaine	Butler Schein	14583	
Light Sensor	Thor Labs	PM100D	Compact energy meter console with digital display
Loctite instant adhesive	Grainger	5E207	
Magnesium sulfate	Sigma-Aldrich	203726	
Microelectrode Amplifier/Data Acquisition	Molecular Devices	MULTICLAMP700B / Digidata 1440A	
Microinjector pump	Harvard Apparatus	70-4501	Dual syringe
Micromanipulator	Sutter Instruments	MPC-200/ROE-200	
Microscope	Olympus	BX51WI	Upright microscope for electrophysiology
Microscope	Olympus	BX61VS	Epifluorescent slide-scanning microscope
N-methyl-D-glucamine	Sigma-Aldrich	M2004	
Orthojet dental cement, liquid	Lang Dental	1504BLK	black
Orthojet dental cement, powder	Lang Dental	1530BLK	Contemporary powder, black
Paraformaldehyde	Sigma-Aldrich	P6148	
Patch Cables	Thor Labs	FP200ERT	Multimode, FT030 Tubing
Picrotoxin	Fisher Scientific	AC131210010	
Polishing Disc	Thor Labs	D50FC	
Polishing Pad	Thor Labs	NRS913	9" x 13"
Polishing Paper	Thor Labs	LFG5P	5 μ m grit
Polishing Paper	Thor Labs	LFG3P	3 μ m grit
Polishing Paper	Thor Labs	LFG1P	1 μ m grit
Polishing Paper	Thor Labs	LFG03P	0.3 μ m grit
Potassium chloride	Sigma-Aldrich	P9333	
Potassium hydroxide	Fisher Scientific	P5958	
Potassium methanesulfonate	Fisher Scientific	83000	
QX-314-Cl	Alomone Labs	Q-150	
Rimadyl (Carprofen)	Henry Schein	24751	

Self-Administration Chambers/ Software	Med Associates	MED-NP5L-D1	
Sodium bicarbonate	Sigma-Aldrich	S5761	
Sodium chloride	Sigma-Aldrich	S7653	
Sodium Hydroxide	Sigma-Aldrich	1064980500	
Sodium L-Ascorbate	Sigma-Aldrich	A7631	
Sodium Pentobarbital	Henry Schein	24352	
Sodium phosphate	Sigma-Aldrich	S9638	
Sodium phosphocreatine	Fisher Scientific	P7936	
Sodium pyruvate	Sigma-Aldrich	P2256	
Stainless steel machine screws	WW Grainger	6GB25	M2-0.40mm Machine Screw, Pan, Phillips, A2 Stainless Steel, Plain, 3 mm Length
Stereotaxic adapter for ferrules	Thor Labs	XCL	
Stereotaxic Frame	Stoelting	51603	
Sucrose	Sigma-Aldrich	S8501	
Suture Thread	Fine Science Tools	18020-50	Silk thread; Size: 5/0, Diameter: 0.12 mm
TEA-Chloride	Fisher Scientific	T2265	
Thiourea	Sigma-Aldrich	T8656	
Vetbond Tissue Adhesive	Covetrus	001505	
Vibratome	Leica	VT1200S	
Xylazine	Butler Schein	33198	