

Materials List for

Stereotaxic Viral Injection and Gradient-Index Lens Implantation for Deep Brain *In Vivo* Calcium Imaging

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jove.com/video/63049

Materials

Name	Company	Catalog Number	Comments
0.6mm and 1.2mm drill burrs	KF technology	8000037800	For craniotomy
27-G and 30-G needle	BD PrecisionGlide Needle	REF 305109 and REF305106	For both surgeries
45 angled forceps	Fine Science tools	11251-35	For surgeries
7.5% povidone-iodine solution (Betadine)	Purdue Products L.P.	NDC 67618-151-17	Surface disinfectant
Acetone	Sigma-Aldrich	179124-1L	GRIN lens cleaner
Agarose	Sigma-Aldrich	A9539-25G	For GRIN lens implantation
Antibiotic ointment	HeliDerm Technology	81073087	For virus injection
Anti-inflammatory drug (Ibuprofen)	Johnson & Johnson Consumer Inc	30043308	Acts as pain killer after surgeries
AutoStereota	NIDA/IRP	github.com/liang-bo/autostereota	For GRIN lens implantation
Behavior Recoding Software (Point Grey FlyCap2)	Point Grey	Point Grey Research Blackfly BFLY-PGE-12A2C	For recording behavior
Brass hex nut	McMASTER-CARR	92736A112	For GRIN lens implantation
Buprenorphine	Par Pharmaceuticals	NDC 4202317905	For GRIN lens implantation
Calcium chloride	Sigma	10043-52-4	For preparing aCSF
Commutator	NIDA/IRP	Custom-designed	Component of image acquisition system
Compressed Oxygen and Caxbondioxide tank	Rocky Mountain Air Solutions	BI-OX-CD5C-K	For GRIN lens implantation
Compressed Oxygen tank	Rocky Mountain Air Solutions	OX-M-K	For virus injection
Cordless Microdrill	KF technology	8000037800	For craniotomy
Cyanoacrylate	Henkel Corporation	# 1811182	For GRIN lens implantation
Data acquisition controller	NIDA/IRP	Custom-designed	Component of image acquisition system
Data transmission cable	NIDA/IRP	Custom-designed	Component of image acquisition system
Dental cement set	C&B Metabond and Catalyst	A00253revA306 and A00168revB306	For GRIN lens implantation
Dental cement set	Duralay	2249D	For GRIN lens implantation
Dexamethasone	VEtone	NDC 1398503702	For GRIN lens implantation

Dextrose	Sigma	50-99-7	For preparing aCSF
Diet gel	Clear H2O	72-06-5022	Diet Supplement for mouse
GRIN lens	GRINTECH	NEM-100-25-10-860-S	For GRIN lens implantation
Heating Pad	Physitemp Instruments LLC.	#10023	To keep the mouse body warm during surgeries
Isoflurane	VEtone	V1 502017	Anesthesia
Ketamine	VEtone	V1 501072	For GRIN lens implantation
Lidocaine	WEST-WARD	NDC 0143-9575-01	Local anesthesia
Magnesium chloride hexahydrate	Sigma	7791-18-6	For preparing aCSF
Microliter syringe (Hamilton)	Hamilton	7653-01	For virus injection
MicroSyringe Pump Controller	World Precision Instrument	#178647	For virus injection
Miniscope	NIDA/IRP	Custom-designed	For imaging
Miniscope base	Protolabs	Custom-designed	For mounting the base
Miniscope holding arm	NIDA/IRP	Custom-designed	For mounting the base
Miniscope protection cap	Protolabs	Custom-designed	For protecting the miniscope
Motorized controller	Thorlabs	KMTS50E	For mounting the base
NeuView	NIDA/IRP	https://github.com/giovannibarbera/miniscope_v1.0	For in vivo imaging
Ophthalmic ointment	Puralube Vet Ointment	NDC 17033-211-38	Ophthalmic
PCR tube	Thermo Scientific	AB-0622	For GRIN lens implantation
Pinch Clamp	World Precision Instrument	14040	For clamping the tubing
Polytetrafluoroethylene (PTFE) tape	TegaSeal PTFE Tape	A-A-58092	For fastening miniScope to the base
Potassium chloride	Sigma	7447-40-7	For preparing aCSF
Robotic arm	NIDA/IRP	Custom-designed	For GRIN lens implantation
Saline	Hospira	RL 7302	For both surgeries
Set screw	DECORAH LLC.	3BT-P9005-00-0025	For screwing the brass hex nut in miniscope base
Silicone Rubber tubing, 0.062"ID, 1/8"OD	McMaster	2124T3	For irrigation of aCSF
Sodium bicarbonate	Sigma	144-55-8	For preparing aCSF
Sodium chloride	Sigma	7647-14-5	For preparing aCSF
Sodium phosphate monobasic	Sigma	7558-80-7	For preparing aCSF
Stereotaxic stage	KOPF	Model 962 Dual Ultra Precise Small Animal Stereotaxic	For both surgeries
Sterile cotton swab	Puritan	REF 806-WC	For both surgeries
Surgical tools	Fine Science tools	11251-35	For surgeries
Suture	Sofsilk	REF SS683	For virus injection
Syringe filter (0.22 µm)	Millex	SLGVR33RS	For filtering aCSF during GRIN lens implantation
Viral suspension (AAV1-CamKII-GCamp6f)	Addgene	100834-AAV1	For virus injection
		Titre: 2.8 X 10 ¹³ GC/ml	
Xylazine	VEtone	V1 510650	For GRIN lens implantation