

Materials List for

# A Lightweight Drive Implant for Chronic Tetrode Recordings in Juvenile Mice

Robert J. Pendry<sup>1,2</sup>, Lilyana D. Quigley<sup>1,2</sup>, Lenora J. Volk<sup>1,3,4</sup>, Brad E. Pfeiffer<sup>1,3</sup>

<sup>1</sup>Department of Neuroscience, UT Southwestern Medical Center <sup>2</sup>Neuroscience Graduate Program, UT Southwestern Medical Center <sup>3</sup>O'Donnell Brain Institute, UT Southwestern Medical Center <sup>4</sup>Department of Psychiatry, UT Southwestern Medical Center

## Corresponding Author

Brad E. Pfeiffer

Brad.Pfeiffer@UTSouthwestern.edu

## Citation

Pendry, R.J., Quigley, L.D., Volk, L.J., Pfeiffer, B.E. A Lightweight Drive Implant for Chronic Tetrode Recordings in Juvenile Mice. *J. Vis. Exp.* (196), e65228, doi:10.3791/65228 (2023).

## Date Published

June 2, 2023

## DOI

10.3791/65228

## URL

jove.com/video/65228

## Materials

Name	Company	Catalog Number	Comments
10 V video tracking LEDs	Neuralynx	HS-LED-Red/Green-omni-10V	For use with headstage pre-amplifiers that contain LED sockets for movement tracking purposes
16TT EIB Board	Neuralynx	EIB-36-16TT	Electronic interface board- omnetics connector
16TT headstage pre-amplifier	Neuralynx	HS-36-LED	Omnetics 44 socket signal amplifier between EIB board and tether cable for recording applications; includes connectors for headstage LEDs for movement tracking purposes
Baby-Mixer hemostat	FST	13013-14	Fine curved hemostat
Bone anchor screw	Stoelting	51457	Used to attach EIB board to main drive body
Burpenorphine	ZooPharm	Lot #BERLAB0.5-221207	Burpenorphine (0.5 mg/mL) 5mL quantity
Cable tether	Neuralynx	HS-36 Litz Tether	Lightweight shielded wire tether for omnetics headstages; length options of 1 m/2 m/3 m/5 m
Carprofen/Rimadyl	Bio-Serve	MD150-2	Post-operative anti-inflammatory agent
Clear resin v4	Formlabs	FLGPGR04	Liquid resin that is photopolymerized by 3D printer during the 3D printing process
Custom (shuttle) screw	Advanced Machining and Tooling, Inc.	Custom	Machined and threaded custom screws
Dental acrylic liquid component	Teets denture material	Lot# 329801	liquid component of denture material (see above)
Dental acrylic powder component	Teets denture material	Lot# 583987	"cold cure" denture material, methyl methacrylate; mixed with liquid component for application to secure recording device in place
DietGel Boost	ClearH2O	72-04-5022	High calorie dietary supplement for young/recovering mice

Digital Lynx 16SX	Neuralynx	DigitalLynx 16SX Base	Main recording apparatus with 16 combo board slots for up to 512 recording channels
Dissector scissors- heavy blades	FST	14082-09	Various
Dumont #5 ceramic coated forceps	FST	11252-50	Tetrode handling/threading/pinning
Dumont #5SF forceps	FST	11252-00	Multipurpose assembly use
Dumont #5SF forceps	FST	11252-00	Multipurpose surgical use
Dumont #7 fine forceps (curved)	FST	11274-20	Various
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EIB-36 plating adapter	Neuralynx	EIB-36 plating adapter	Plating/assembly use
EIB-36 plating adapter	Neuralynx	EIB-36 plating adapter	Stereotactic accessory for lowering drive onto skull during surgery
Euthasol	Virbac	710101	Pentobarbital sodium for euthanasia
Extra fine Bonn scissors	FST	14083-38	Various
Extra fine graefe forceps	FST	11150-10	Small straight serrated forceps
Extra fine graefe forceps	FST	11150-10	Small straight serrated forceps
Fine hemostats	FST	13006-12	Fine hemostats
Fine scissors- CeramaCut	FST	14958-09	Tetrode cutting
Fine scissors- ToughCut	FST	14058-09	Various
Form 3+	Formlabs	PKG-F3-P-WS-SVC-BASIC	3D printer for fabrication of all printed parts/materials; low-force stereolithography 3D printer (LFS)
Gel super glue	Loctite	1363589	Various steps
Graefe forceps	FST	11049-10	Small angled serrated forceps
Ground wire	A-M Systems	Lot# 582335	Stainless steel bare wire, .005" diameter, annealed, 100 feet
Hair removal gel	Generic	Commercially available	For pre-op removal of hair from top of mouse head
Heat gun	Dewalt	D26960K	Tetrode fusion following spinning
High temperature cautery kit	FST	18010-00	For use with bone wax if applicable
Hot bead sterilizer	FST	18000-45	Electrical sterilization apparatus for ad hoc instrument sterilization during surgical procedures
Isoflurane	Covetrus	11695067771	Standard isoflurane liquid anesthesia for use in isoflurane vaporizer to max 5%
Isopropyl alcohol 91%	Generic	Commercially available	For standard pre-operative sterilization procedure
Jewelry screw (bone screws for juvenile mice)	Component supply co.	MX-000120-02SFL	S/S machine screw #000-120 x 1/8" filister head, slotted drive
LaGrange scissors	FST	14173-12	Various
Large polyimide tubing	Nordson medical	Lot # 13564	Polyimide tubing- inner diameter 0.0071"; outer diameter 0.0115"; length 36"
Liquid super glue	Loctite	1365882	Various steps
Micro drill	Foredom	K.1070	K.1070 high speed rotary micromotor kit; with control box, 3/32" collet, variable speed foot control, handpiece cradle; stereotactically fittable; 100–115 V use
Micro drill burr (0.5 mm+)	FST	19007-05/07/09	Craniotomy
Mineral oil	Sigma	Pcode 1002076577; M5904-500mL	Various steps
Mineral oil	Sigma	Pcode 1002076577; M5904-500mL	For use keeping craniotomy holes open

Miniature flathead screwdriver	FST	30051-10	Insertion/tightening of bone screws
Neosporin Triple Antibiotic Ointment	Johnson & Johnson	512373700	Antibiotic ointment
Omnetics 44 socket nano connector	Neuralynx	Neuralynx part #A70427-801	NONSTANDARD ITEM- omnetics 44 socket (female) dual row straight leg nano connector with 2 guide pins (male) for use with custom-made counterbalance apparatus
Platinum 10% iridium wire	California fine wire	MO# M374710	Fine recording wire spun into tetrodes for use during recording by use of the terode assembly station and spinner 2.0 (see below); HML NATRL VG BOND COAT; SIZE .0007 X 200FT
Platinum black plating solution	Neuralynx	Platinum black plating solution	Plating
Polycarbonate cage bottom	Thomas Scientific/Maryland plastics	1113M35; mfr. No. E0270	Standard cage bottom; can be fitted with wire mesh apparatus over top that contains chow+water bottle for unimplanted mice
Polycarbonate cage top with N10 micro filter	Ancare	N/A	Standard cage top to be modified with PVC pipe for counterbalance apparatus
Povidone iodine 10%	Generic	Commercially available	For standard pre-operative sterilization procedure
PVC pipe	Charlotte pipe	N/A	1/2" x 600 PSI schedule 40 white PVC pipe; for use/assembly into counterbalance apparatus during mouse recovery
Scalpel blades- #4	FST	10060-00	Incision use
Scalpel handle- #4 gross anatomy	FST	10060-13	Incision use
Self-holding pin and bone screw forceps	FST	26100-00	Holder for bone and ground screws while inserting into skull
Small EIB pins	Neuralynx	Small EIB pins	Attachment of tetrode wires to EIB board
Small polyimide tubing	Nordson medical	Lot # 19102423	Polyimide tubing- inner diameter 0.004"; outer diameter 0.0044"; length 36"
SolidWorks	Dassault Systemes	SolidWorks	3D CAD program for micro-drive design
Spatula and probe	FST	1090-13	Applicator for petroleum jelly/mineral oil + optional use for ad hoc tetrode straightening
Spring scissors- 8 mm	FST	15024-10	Scissors for cranial tissue incisions
Spring scissors- 8 mm	FST	15024-10	Initial incisions
Standard pattern forceps	FST	11000-12	Large serrated forceps
Surgical scissors- sharp-blunt	FST	14001-12	Various
Surgical scissors- ToughCut	FST	14054-13	Various
Tetrode assembly station	Neuralynx	Tetrode assembly station	Tetrode Assembly
Tetrode spinner 2.0	Neuralynx	Tetrode spinner 2.0	Tetrode Assembly
Two-part epoxy	Gorilla brand	4200102	Various steps