

Materials List for:

Focused Ion Beam Lithography to Etch Nano-architectures into Microelectrodes

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URL: <https://www.jove.com/video/60004>

DOI: [doi:10.3791/60004](https://doi.org/10.3791/60004)

Materials

Name	Company	Catalog Number	Comments
16-Channel ZIF-Clip Headstage	Tucker Davis Technologies	ZC16	The headstage and headstage holder may need to be changed, depending on the electrode used. https://www.tdt.com/zif-clip-digital-headstages.html
1-meter cable, ALL spring wrapped	Thomas Scientific	1213F04	Any non treated petri dish will suffice. https://www.thomassci.com/Laboratory-Supplies/Cell-Culture-Dishes/_/Non-Treated-Petri-Dishes?q=petri%20dish%20cell%20culture
32-Channel ZIF-Clip Headstage Holder	Tucker Davis Technologies	Z-ROD32	The headstage and headstage holder may need to be changed, depending on the electrode used. https://www.tdt.com/zif-clip-digital-headstages.html
Acetone, Thinner/Extender/Cleaner, 30ml	Ted Pella	16023	https://www.tedpella.com/SEMmisc_html/SEMpaint.htm#anchor16062
Baby-Mixer Hemostat	Fine Science Tools	13013-14	Any curved hemostat will suffice. https://www.finescience.com/en-US/Products/Forceps-Hemostats/Hemostats/Baby-Mixer-Hemostat
Carbon Conductive Tape, Double Coated	Ted Pella	16084-7	The protocol suggested three options for mounting the functional electrode to the aluminum stub (copper or carbon conductive tape or a low profile clip. We utilized the carbon conductive tape in our study. https://www.tedpella.com/semmisc_html/semadhes.htm
Corning Costar Not Treated Multiple Well Plates - 6 well	Sigma Aldrich	CLS3736-100EA	Any non-treated 6 well plate will suffice. https://www.sigmaaldrich.com/catalog/substance/
Dumont #5 Fine Forceps	Fine Science Tools	11251-30	Either this fine forceps or the vacuum pump will suffice. https://www.finescience.com/en-US/Products/Forceps-Hemostats/Dumont-Forceps/Dumont-5-Forceps/11251-30

Ethanol, 190 proof (95%), USP, Decon Labs	Fisher Scientific	22-032-600	Any 95% ethanol will suffice. https://www.fishersci.com/shop/products/ethanol-190-proof-95-usp-decon-labs-10/22032600
Falcon Cell Strainer	Fisher Scientific	08-771-1	https://www.fishersci.com/shop/products/falcon-cell-strainers-4/087711
FEI, Tescan, Zeiss (also for Philips, Leo, Cambridge, Leica, CamScan), aluminum, grooved edge, Ø32mm	Ted Pella	16148	Depending on the SEM machine used, you may need a different size stub. https://www.tedpella.com/SEM_html/SEMpinnacle.htm#_16180
Fisherbrand Aluminum Foil, Standard-gauge roll	Fisher Scientific	01-213-101	Any aluminum foil will suffice. https://www.fishersci.com/shop/products/fisherbrand-aluminum-foil-7/p-306250
Fisherbrand Low- and Tall-Form PTFE Evaporating Dishes	Fisher Scientific	02-617-149	Any Teflon plate will suffice, this is used to dry the probes after washing on a surface they will not stick onto. https://www.fishersci.com/shop/products/fisherbrand-low-tall-form-ptfe-evaporating-dishes-12/p-88552
Michigan-style silicon functional electrode	NeuroNexus	A1x16-3mm-100-177	http://neuronexus.com/electrode-array/a1x16-3mm-100-177/
Model 1772 Universal holder	KOPF	Model 1772	Other stereotaxic frames and accessories will suffice. http://kopfinstruments.com/product/model-1772-universal-holder/
Model 900-U Small Animal Stereotaxic Instrument	KOPF	Model 900-U	Other stereotaxic frames and accessories will suffice. http://kopfinstruments.com/product/model-900-small-animal-stereotaxic-instrument1/
Model 960 Electrode Manipulator with AP Slide Assembly	KOPF	Model 960	Other stereotaxic frames and accessories will suffice. http://kopfinstruments.com/product/model-1772-universal-holder/
Parafilm M 10cm x 76.2m (4" x 250')	Ted Pella	807-5	https://www.tedpella.com/grids_html/807-2.htm
PELCO Vacuum Pick-Up System, 220V	Ted Pella	520-1-220	Either this vacuum pump or the fine forceps will suffice. http://www.tedpella.com/grids_html/Vacuum-Pick-Up-Systems.htm#anchor-520
PELCO Conductive Silver Paint	Ted Pella	16062	https://www.tedpella.com/SEMmisc_html/SEMpaint.htm#anchor16062
SEM FIB FEI Helios 650 Nanolab	Thermo Fisher Scientific	Helios G2 650	This is the specific focused ion beam and scanning electron microscope used in the protocol. The Nanobuilder software is what it comes with. If a different FIB instrument is used, it may not be completely compatible with the protocol, specifically the steps requiring the Nanobuilder software. https://www.fei.com/products/dualbeam/helios-nanolab/