

Materials List for:

Measurement of Extracellular Ion Fluxes Using the Ion-selective Self-referencing Microelectrode Technique

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Materials

Name	Company	Catalog Number	Comments
IonAmp	BioCurrents Research Center, Woods Hole, MA, USA	none	amplifier created by the BioCurrents Research Center, Woods Hole, MA, USA; Similar system can be purchased from "XBL function matters" (http://www.xuyue.org/) or from "YoungerUSA" (http://www.youngerusa.com/) or from Applicable Electronics(http://www.applicableelectronics.com/)
IonAmp32	BioCurrents Research Center, Woods Hole, MA, USA	none	software created by the BioCurrents Research Center, Woods Hole, MA, USA; Similar system can be purchased from "XBL function matters" (http://www.xuyue.org/) or from "YoungerUSA" (http://www.youngerusa.com/) or from Applicable Electronics(http://www.applicableelectronics.com/)
Headstage pre-amplifier	BioCurrents Research Center, Woods Hole, MA, USA	INA116	BSR Voltage Follower INA116, designed by the BioCurrents Research Center, Woods Hole, MA, USA; Similar system can be purchased from "XBL function matters" (http://www.xuyue.org/) or from "YoungerUSA" (http://www.youngerusa.com/) or from Applicable Electronics(http://www.applicableelectronics.com/)
MicroStep Driver	BioCurrents Research Center, Woods Hole, MA, USA	none	three MicroStep drivers are required for X, Y and Z-positioning; created by the BioCurrents Research Center, Woods Hole, MA, USA; Similar system can be purchased from "XBL function matters" (http://www.xuyue.org/) or from "YoungerUSA" (http://www.youngerusa.com/) or from Applicable Electronics(http://www.applicableelectronics.com/)
Manual micropositioner	World Precision Instruments	Model KITE-R	Similar system can be purchased from Applicable Electronics(http://www.applicableelectronics.com/)

Magnetic stand	World Precision Instruments	Model M10	Similar system can be purchased from Applicable Electronics(http://www.applicableelectronics.com/)
Vibration isolation table	Newport Inc.	Model VW-3036-OPT-023040	Similar system can be purchased from Applicable Electronics(http://www.applicableelectronics.com/)
Part of three dimensional micropositioner: angle bracket, 90°, slotted faces	Newport Inc.	Model 360-90	Assemblage of the three dimensional micropositioner requires also Three electric rotary motors for X, Y, Z control, MPH-1 mounting arm with MCA-2 adjustable-angle post and Various Newport connectors and screws to bolt onto vibration table
Part of three dimensional micropositioner: Peg-Joining Dovetail Stage 0.5 inch X Travel	Newport Inc.	460PD-X	none
Part of three dimensional micropositioner: Quick-Mount Linear Stage, 0.5 inch XY Travel	Newport Inc.	460A-XY	none
Kwik-Fil thin walled borosilicate glass capillaries without filament	World Precision Instruments	TW150-4	none
Electrode puller	Narishige	PC-10	none
Metal rack	Made in-house	none	Metal electrode holder made in-house by drilling 2 mm wide holes half centimeter spaced in a 10cm by 15cm rectangular base of steel
Oven	QL	Model 10 Lab Oven	none
Silanization solution I	Sigma-Aldrich	85126	Hazardous, handle as recommended by provider
Glass Petri dish; Pyrex	Fisher Scientific	316060	none
Electrode/micropipette storage jar	World Precision Instruments	E215	none
Glass dessicator	Fisher Scientific	08-595E	Contains Drierite dessicant (W.A. Hammond Drierite Co. Ltd, Xenia, OH, USA). Place petroleum jelly on the seal to make it airtight.
Plastic Pasteur pipette	Fisher Scientific	11597722	none
Bunsen burner	Fisher Scientific	S97329	none
Microscope slide	Sigma-Aldrich	S8902	none
Straight microelectrode holder	Warner Instruments	QSW-A15P	with a gold 1 mm male connector and Ag/AgCl wire
Straight microelectrode holder	World Precision Instruments	MEH3S	with a AgCl(Ag ⁺) pellet inside and a gold 2 mm male connector
6 cm Petri dish	VWR	60872-306	none
Nitex mesh	Dynamic Aqua-Supply Ltd.	NTX750	none
Glue; Loctite epoxy	VWR	500043-451	Mix glue and hardener in equal parts in a plastic weighing boat and mix thoroughly. Sets quickly but leave at RT for 24 h for full curing
Deionized water	Sigma-Aldrich	99053	none
Sodium Chloride	Sigma-Aldrich	S7653	none
Potassium Chloride	Sigma-Aldrich	P9333	none
Calcium Chloride	Sigma-Aldrich	C1016	none
Magnesium Chloride	Sigma-Aldrich	M8266	none
Hepes	Sigma-Aldrich	H3375	none

Sodium Hydroxyde	Sigma-Aldrich	S8045	none
Potassium Acetate	Sigma-Aldrich	P1190	none
Agarose	Sigma-Aldrich	A9539	none