

Materials List for:

# Time-dependent Increase in the Network Response to the Stimulation of Neuronal Cell Cultures on Micro-electrode Arrays

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## Materials

Name	Company	Catalog Number	Comments
Ascorbic Acid	Sigma Aldrich	A4403	Make 4 mg/mL aliquots
B-27	Invitrogen	17504-044	Serum-free supplement for neural cell culture. Make 1 mL aliquots and freeze
Beakers - glass - 100 mL	VWR	13912-160	
Beakers - glass - 500 mL	VWR	10754-956	
Blunt-tipped thumb forceps	World Precision Instruments	500365-G	
Cryogenic vial - sterile, 2 mL	Fisher Scientific	10-500-26	
Cryogenic vial - sterile, 5 mL	Fisher Scientific	10-500-27	
DMEM with Glutamax	Gibco Life Technology	10569-010	Cell culture media that contains a stabilized form of L-glutamine
DNase	Worthington Biochemical	LK003172	
Ethanol	Fisher Scientific	04-355-451	
Fetal bovine serum (FBS)	ATCC	30-2030	
Fine-tipped thumb forceps	World Precision Instruments	501324-G	
Glass Pipets	VWR	14673-010	
GlutaMAX -- I (100X)	Gibco Life Technology	35050-061	A stabilized form of L-glutamine used as a supplement
Hemocytometer chip	Fisher Scientific	22-600-101	
Hibernate EB complete	BrainBits	D00118	Ambient CO <sup>2</sup> cell storage media
Horse Serum	Atlanta Biologicals	S12195H	
Laminin	Sigma Aldrich	L2020-1MG	
MCS filter amplifier	MultiChannel System	FA60SBC	
MCS headstage/pre-amplifier	MultiChannel System	MEA1060-INV	
MCS microelectrode array	MultiChannel System	60MEA200/10iR-ITO	
MCS power supply	MultiChannel System	PS20W	
MCS signal divider	MultiChannel System	SDMEA	
MCS stimulus generator	MultiChannel System	STG4002	
MCS temperature controller	MultiChannel System	TC02	
Media storage bottle - glass 500 mL	VWR	10754-818	Autoclave
Microcentrifuge tubes - 0.4 mL	Thermo Fisher	3485	Autoclave
Microcentrifuge tubes - 2 mL	Thermo Fisher	3434ECONO	Autoclave

Micropipette tips - 10 µL	VWR	37001-166	Autoclave
Micropipette tips - 1,000 µL	VWR	13503-464	Autoclave
Micropipette tips - 200 µL	VWR	37001-596	Autoclave
Micropipetter - 10 µL	Thermo Fisher	4641170N	
Micropipetter - 1,000 µL	Thermo Fisher	4641210N	
Micropipetter - 200 µL	Thermo Fisher	4641230N	
Papain - 0.22 Filtered	Worthington Biochemical	LK003178	
Penicillin-Streptomycin (Pen Strep)	Thermo Fisher	15070063	
Petri dishes -100 mm disposable	Fisher Scientific	08-757-100D	
Petri dishes -100 mm glass	VWR	10754-788	
Petri dishes -35 mm	Fisher Scientific	08-757-100A	
Phosphate buffer saline (PBS) (1x)	Corning	21-040-CV	
Plasma Cleaning System	Plasma Etch, Inc.	PE-50	
Poly-D-lysine hydrobromide (PDL)	Sigma Aldrich	P6407-5MG	
Polyethylene conical (centrifuge) tube -15 mL	Fisher Scientific	05-527-90	
Polypropylene conical (centrifuge) tube -50 mL	Falcon	352070	
Procedure masks	Imco	1530-imc	
Pyruvate	Sigma Aldrich	P4562-5G	
Scalpel blades	World Precision Instruments	500237-G	
Scissors - iris	World Precision Instruments	14111-G	
Scissors - large	World Precision Instruments	14214	
Scissors - small surgical	World Precision Instruments	501733-G	
Serological pipette - sterile, 1 mL	VWR	89130-892	
Serological pipette - sterile, 2 mL	VWR	89130-894	
Serological pipette - sterile, 25 mL	VWR	89130-900	
Serological pipette - sterile, 50 mL	VWR	89130-902	
Software: Matlab GUI	Peixoto Lab	npeixoto@gmu.edu	Used to analyze .mat files. Available for free upon request. Contact npeixoto@gmu.edu to request a copy.
Software: MCS MC_Rack	MultiChannel System	N/A	Used for data acquisition
Software: NeuroExplorer	Plexon	<a href="http://www.plexon.com/products/neuroexplorer">http://www.plexon.com/products/neuroexplorer</a>	Used to convert .nex files to .mat
Software: Offline Sorter	Plexon	<a href="http://www.plexon.com/products/offline-sorter">http://www.plexon.com/products/offline-sorter</a>	Used to sort neural spikes and convert data files to .plx and then to .nex
Software Manual: MCS MC_Rack	MultiChannel System		<a href="https://www.multichannelsystems.com/sites/multichannelsystems.com/files/documents/manuals/MC_Rack_Manual.pdf">https://www.multichannelsystems.com/sites/multichannelsystems.com/files/documents/manuals/MC_Rack_Manual.pdf</a>
Software Manual: NeuroExplorer	Plexon		<a href="https://www.neuroexplorer.com/downloads/Nex3Manual.pdf">https://www.neuroexplorer.com/downloads/Nex3Manual.pdf</a>
Software Manual: Offline Sorter	Plexon		<a href="http://www.plexon.com/system/files/downloads/Offline%20Sorter%20v2.8%20Manual.pdf">www.plexon.com/system/files/downloads/Offline%20Sorter%20v2.8%20Manual.pdf</a>
Spatula - small double-ended	World Precision Instruments	503440	
Stericup 0.22 µm pore filter - 250 mL	Millipore	SCGVU02RE	

Transfer pipette - large bore	Thermo Fisher	335-1S	
Transfer pipette - small bore	Thermo Fisher	242-1S	
Trypan blue	Sigma Aldrich	T8154-20ML	
Whatman filter paper	Whatman	1442 150	Cut into 8 pie wedges and autoclave in a glass Petri dish