

Materials List for:

Preparation of Acute Brain Slices Using an Optimized N-Methyl-D-glucamine Protective Recovery Method

Jonathan T. Ting^{*1}, Brian R. Lee^{*1}, Peter Chong¹, Gilberto Soler-Llavina¹, Charles Cobbs², Christof Koch¹, Hongkui Zeng¹, Ed Lein¹

¹Cell Types Program, Allen Institute for Brain Science

²The Ben and Catherine Ivy Center for Advanced Brain Tumor Treatment, Swedish Neuroscience Institute

*These authors contributed equally

Correspondence to: Jonathan T. Ting at jonathant@alleninstitute.org

URL: <https://www.jove.com/video/53825>

DOI: [doi:10.3791/53825](https://doi.org/10.3791/53825)

Materials

Name	Company	Catalog Number	Comments
Compressstome VF-200	Precisionary Instruments	VF-200	Vibrating tissue slicer (recommended)
N-methyl-D-glucamine	Sigma Aldrich	M2004	aCSF constituent
Sodium Chloride	Sigma Aldrich	S3014	aCSF constituent
Potassium Chloride	Sigma Aldrich	P5405	aCSF constituent
Sodium Phosphate monobasic dihydrate	Sigma Aldrich	71505	aCSF constituent
Sodium Bicarbonate	Sigma Aldrich	S5761	aCSF constituent
HEPES	Sigma Aldrich	H4034	aCSF constituent
Glucose	Sigma Aldrich	G7021	aCSF constituent
Sodium Ascorbate	Sigma Aldrich	A4034	aCSF constituent
Thiourea	Sigma Aldrich	T8656	aCSF constituent
Sodium pyruvate	Sigma Aldrich	P5280	aCSF constituent
Calcium chloride dihydrate	Sigma Aldrich	C7902	aCSF constituent
Magnesium Sulfate heptahydrate	Sigma Aldrich	M1880	aCSF constituent
2,2,2-Tribromoethanol	Sigma Aldrich	T48402	Anesthetic component 1
2-methyl-2-butanol	Sigma Aldrich	240486	Anesthetic component 2
Curved blunt forceps	Fine Science Tools	11065-07	Brain dissection tools
Fine dissecting scissors (supercut)	Fine Science Tools	14058-09	Brain dissection tools
Large heavy duty scissors 7"	Fine Science Tools	14000-18	Brain dissection tools
Metal spatula	Sigma Aldrich	Z511455-1PAK	Brain dissection tools
Razor blades	VWR	89031-954	Brain dissection tools
Brain Slice Keeper-4	Automate Scientific	S-BSK4	brain slice holding chamber
nylon netting	Warner Instruments	64-0198	For building small slice recovery chambers
Pyrex glass beakers (250 mL)	VWR	89090-434	For building small slice recovery chambers
35 mm plastic dish, round	VWR	100488-376	For building small slice recovery chambers
Gas diffuser stones (10 µm)	Sigma Aldrich	59277	For constant carbogenation (fine bubbles)
Agarose Type I-B	Sigma Aldrich	A0576	For embedding brain specimens
Micro loader tips	Eppendorf	22491229	For filling patch clamp electrodes

Sylgard	VWR	102092-312	For making a custom dissecting platform
Hydrochloric acid	Sigma Aldrich	H1758-100ML	For pH adjustment of media
Sodium Hydroxide	Sigma Aldrich	221465-25G	For pH adjustment of media
Potassium Hydroxide	Sigma Aldrich	221473	For pH adjustment of media
Plastic transfer pipets 3 mL graduated	VWR	89497-676	For slice transfer
Zirconium ceramic injector blades	Cadence Specialty Blades	EF-INZ10	http://cadenceinc.com/
KG-33 borosilicate glass capillary w/filament	King Glass Company	custom quote	ID: 0.87mm, OD 1.50mm
Biocytin	Sigma Aldrich	B4261	Intern pipette solution
Phosphocreatine disodium	Sigma Aldrich	P7936	Intern pipette solution
Potassium Gluconate	Sigma Aldrich	G4500-100G	Intern pipette solution
EGTA	Sigma Aldrich	E3889	Intern pipette solution
Mg-ATP	Sigma Aldrich	A9187	Intern pipette solution
Na ₂ -GTP	Sigma Aldrich	51120	Intern pipette solution
sucrose	Sigma Aldrich	S0389	Intern pipette solution
Heated water bath (2.5L)	VWR	13491-060	Miscellaneous
Filter paper rounds	VWR	28456-022	Miscellaneous
Cyanoacrylate glue	Amazon	B000BQRBO6	Miscellaneous
Glass petri dish	VWR	89000-326	Miscellaneous
10X Phosphate buffered saline	Sigma Aldrich	P5493	Miscellaneous
30 mL syringes	VWR	BD302832	Miscellaneous
1 mL syringes	VWR	BD-309628	Miscellaneous
25 5/8 gauge needles	VWR	89219-292	Miscellaneous
Thermomixer (w/1.5 mL tube block)	VWR	89232-908	To keep agarose molten