

Materials List for

# Real-Time Fluorescent Measurement of Synaptic Functions in Models of Amyotrophic Lateral Sclerosis

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jove.com/video/62813

## Materials

Name	Company	Catalog Number	Comments
20x air objective	Nikon		For imaging
40x oil immersion objective	Nikon		For imaging
B27 supplement	Thermo Scientific	17504044	Neuronal growth supplement
BD Syringes without Needle, 50 mL	Thermo Scientific	13-689-8	Part of gravity perfusion assembly
Biosafety cell culture hood	Baker	SterilGARD III SG403A	Asceptic cell culturing, transfection, and dye loading
b-Mercaptoethanol	Millipore Sigma	M3148	For culturing and maintenance of neuronal cultures
Bovine Serum Albumin	Millipore Sigma	A9418	For preparing neuronal cultures
Calcium chloride dihydrate	Millipore Sigma	223506	Component of aCSF solutions
Cell culture CO <sub>2</sub> incubator	Thermo Scientific	13-998-123	For culturing and maintenance of neurons
Centrifuge	Eppendorf	5810R	For neuronal culture preparation
Confocal microscope	Nikon	Eclipse Ti +A1R core	For fluorescence imaging
CoolSNAP ES2 CCD camera	Photometrics		For image acquisition
D-Glucose	Millipore Sigma	G8270	Component of aCSF solutions
DNase	Millipore Sigma	D5025	For neuronal culture preparation
Female, timed-pregnancy Sprague Dawley rats	Charles river	400SASSD	For preparing embryonic cortical and spinal motor neuron cultures
FITC Filter cube	Nikon	77032509	For imaging Gcamp calcium transients
FM4-64 styryl dye	Invitrogen	T13320	For imaging synaptic vesicle release
Glass bottom petri dishes (Thickness #1.5)	CellVis	D35-10-1.5-N	For growth of neurons on imaging-compatible culture dish
Glass Pasteur pipette	Grainger	52NK56	For preparing neuronal cultures
Hank's Balanced Salt Solution (HBSS)	Millipore Sigma	H6648	For preparing neuronal cultures
HEPES	Millipore Sigma	H3375	Component of aCSF solutions

High KCl artificial cerebrospinal fluid (aCSF)			For imaging. Please see recipes*
horse serum	Millipore Sigma	H1138	For culturing and maintenance of neurons
Laminar flow dissection hood	NUAIRE	NU-301-630	For preparing neuronal cultures
Laminin	Thermo Scientific	23017015	For preparing neuronal cultures
Leibovitz's L-15 Medium	Thermo Scientific	11415064	For preparing neuronal cultures
Leibovitz's L-15 Medium, no phenol red	Thermo Scientific	21083027	For preparing neuronal cultures
L-Glutamine (200 mM)	Thermo Scientific	25030149	Neuronal culture supplement
Lipofectamine 2000 Transfection Reagent	Thermo Scientific	11668019	For neuronal transfections
Low KCl artificial cerebrospinal fluid (aCSF)			For imaging. Please see recipes*
Magnesium chloride	Millipore Sigma	208337	Component of aCSF solutions
Microsoft Excel	Microsoft		Software for data analysis/normalization
Nalgene Filter Units, 0.2 µm PES	Thermo Scientific	565-0020	Filter unit for aCSF solution
Neurobasal medium	Thermo Scientific	21103049	For culturing and maintenance of neuronal cultures
NIS-Elements Advanced Research	Nikon		Software for image capture and analysis
Nunc 15 mL Conical tubes	Thermo Scientific	339650	For preparing neuronal culture and buffer solutions
Nunc 50 mL conical tubes	Thermo Scientific	339652	For preparing neuronal culture and buffer solutions
Optiprep	Millipore Sigma	D1556	For preparing neuronal cultures
Papain	Millipore Sigma	P4762	For preparing neuronal cultures
Penicillin-Streptomycin (10,000 U/mL)	Thermo Scientific	15140122	To prevent bacterial contamination of neuronal cultures
Perfusion system	Warner Instruments	SF-77B	For exchange of aCSF
Perfusion tubing	Cole-Parmer	UX-30526-14	Part of gravity perfusion assembly
pGP-CMV-Gcamp6m plasmid	Addgene	40754	For imaging calcium transients
Poly-D-lysine hydrobromide	Millipore Sigma	P7886	Coating agent for glass bottom petri dishes
Potassium chloride	Millipore Sigma	P3911	Component of aCSF solutions
Sodium bicarbonate	Millipore Sigma	S5761	Component of aCSF solutions
Sodium Chloride	Millipore Sigma	S9888	Component of aCSF solutions
Stage Top Incubator	Tokai Hit		For incubation of live neurons during imaging period
TRITC Filter cube	Nikon	77032809	For imaging FM4-64
Trypsin Inhibitor	Millipore Sigma	T6414	For preparing neuronal cultures
Trypsin-EDTA (0.25%), phenol red	Thermo Scientific	25200056	For preparing neuronal cultures
Vibration Isolation table	New Port	VIP320X2430-135520	Table/stand for microscope