

Materials List for

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

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## 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                              |