

Preparation of Rat Sciatic Nerve for *Ex Vivo* Neurophysiology

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Materials

Name	Company	Catalog Number	Comments
1 L Glass bottle	VWR International Ltd	215-1595	Borosilicate glass
1 L Glass graduated flask	VWR International Ltd	612-3626	Borosilicate glass
2 L Glass bottle	VWR International Ltd	215-1596	Borosilicate glass
2 L Glass graduated flask	VWR International Ltd	BRND937254	Borosilicate glass
Adaptor, pneumatic, 8 mm to 1/4 NPT	RS UK	536-2599	push-to-fit straight adaptor between oxygen hose and gas dispersion tube
Alkoxy conformal coating	Farnell	1971829	ACC15 Alkoxy conformal coating for dissection petri dish preparation
Anesthetic	Chanelle	N/A	Isoflurane inhalation anesthetic, 250 mL bottle
Beaker, 2 L	VWR International Ltd	213-0469	Borosilicate glass
Bipolar nerve cuff	Cortec GMBH	N/A	800 micron inner diameter, perpendicular lead out, no connector termination
Bossheads	N/A	N/A	Standard wet laboratory bossheads for attaching grippers to rods
Calcium Chloride dihydrate	Sigma Aldrich	C7902-500g	500 g in plastic bottle
Carbogen canister	BOC	N/A	F-size canister
Centrifuge Tubes, 15 mL volume	VWR International Ltd	734-0451	Falcon tubes
Conductive elastomer nerve cuff	N/A	N/A	high charge capacity nerve cuff for stimulation, see protocol for fabrication reference
Connector, Termimate	Mouser UK	538-505073-1100-LP	These should be soldered to wire terminated with crocodile clips (see entry 11)
Crocodile clip connectors	RS UK	212-1203	These should be soldered to wire terminated with TermiMate connectors (see entry 10)
Deionized Water	N/A	N/A	Obtained from deionized water dispenser

Forceps angled 45 degrees	InterFocus Ltd	91110-10	Fine forceps, student range
Forceps standard Dumont #7	InterFocus Ltd	91197-00	Student range forceps
Gas Dispersion Tube, Porosity 3	Merck	12547866	N/A
Glucose anhydrous, powder	VWR International Ltd	101174Y	500 g in plastic bottle
Grippers	N/A	N/A	Standard wet laboratory rod-mounted grippers
Heating Stirrer	RS UK	768-9672	Stuart US152
Hemostats	N/A	N/A	Any hemostat >12 cm in length is suitable
Insect Pins, stainless steel, size 2	InterFocus Ltd	26001-45	N/A
Laptop computer	N/A	N/A	Any laboratory-safe portable computer with at least 2 unused USB ports is suitable
Line Noise Filter	Digitimer	N/A	Humbug noise eliminator (50 Hz line noise filter)
Low-Noise Preamplifier, SR560	Stanford Research Systems	SR560	Low-noise voltage preamplifier
Magnesium Sulphate salt	VWR International Ltd	291184P	500g in plastic bottle
MATLAB scripts	Github	https://github.com/Next-Generation-Neural-Interfaces/HFAC_Stimulator_4ch	Initialization, calibration and stimulation scripts for the custom stimulator
MATLAB software	Mathworks	N/A	Standard package
Microscope Light, PL-2000	Photonic	N/A	Light source with swan necks. Product may be obtained from third party supplier
Microscope, SMZ 745	Nikon	SM745	Stereoscopic Microscope
Mineral oil, non-toxic	VWR International Ltd	31911.A1	Oil for nerve bath
Nerve Bath	N/A	N/A	Plexiglas machined nerve bath, see protocol for details.
Oscilloscope	LeCroy	N/A	434 Wavesurfer. Product may be obtained from 3rd party suppliers
Oxygen Hose, 1 meter	BOC	N/A	1/4" NPT terminations
Oxygen Regulator	BOC	C106X/2B:3.5BAR-BS3-1/4"NPTF 230Bar	N/A
Peristaltic Pump P-1	Pharmacia Biotech	N/A	Product may be obtained from third party supplier
Petri Dish, Glass	VWR International Ltd	391-0580	N/A
Potassium Chloride salt	Sigma Aldrich	P5405-250g	250 g in plastic bottle
Potassium Dihydrogen Sulphate salt	Merck	1.04873.0250	250 g in plastic bottle
Rat	Charles River Laboratories	N/A	Sprague Dawley, 250-330 grams, female
Reference electrode, ET072	eDAQ (Australia)	ET072-1	Silver silver-chloride reference electrode
Rod	N/A	N/A	Standard wet laboratory rods with fittings for stands
Scale	Sartorius	N/A	M-Power scale, for weighing powders. Product may be obtained from third-party suppliers
Scissors straight 12 cm edge	InterFocus Ltd	91400-12	blunt-blunt termination, student range
Signal Acquisition Device	Cambridge Electronic Design	Micro3-1401	Micro3-1401 Multichannel ADC
Silicone grease, non-toxic	Farnell	3821559	for sealing of bath partition
Silicone tubing, 2 mm inner diameter	N/A	N/A	N/A
Silicone tubing, 5 mm inner diameter	N/A	N/A	N/A
Silver wire	Alfa Aesar	41390	0.5 mm, annealed
Sodium Bicarbonate salt	Sigma Aldrich	S5761-500g	500 g in plastic bottle

Sodium Chloride salt	VWR International Ltd	27810.295	1 kg in plastic bottle
Spring scissors angled 2 mm edge	InterFocus Ltd	15010-09	N/A
Stand	N/A	N/A	Standard wet laboratory stands with sockets for rods
Stimulator	Digitimer	DS3	DS3 or Custom Stimulator (see references)
Stirring flea	VWR International Ltd	442-0270	For use with the heating stirrer
Syringe tip, blunt, 1 mm diameter	N/A	N/A	N/A
Syringe tip, blunt, 2 mm diameter	N/A	N/A	N/A
Syringe, plastic, 10 mL volume	N/A	N/A	syringe should have luer lock fitting
Tape, water-resistant	N/A	N/A	For securing tubing and wiring to workbench
Thermometer	VWR International Ltd	620-0806	glass thermometer
USB Power Bank	RS UK	135-1000	Custom Stimulator power supply, fully charge before experiment. Not needed if using DS3
Valve, Leuer Lock, 3-Way	VWR International Ltd	229-7440	For attaching syringe to bath feed tube and priming siphon