Materials List for:

A Method for Systematic Electrochemical and Electrophysiological Evaluation of Neural Recording Electrodes

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Materials

Name	Company	Catalog Number	Comments
Programmable Attenuator	TDT	PA5	Controls the amplitude of the acoustic signal across frequencies
Electrostatic speaker driver	TDT	ED1	Drives the electrostatic speakers (EC1)
Coupled electrostatic speaker	TDT	EC1	Delivers sound to the animal
Processing base station	TDT	RZ2	Records neural activity from electrode array (using PZ2 preamplifier)
Preamplifier	TDT	PZ2-256	256-channel high impedance preamplifier
Multifunction Processor	TDT	RX6	Used to generate acoustic stimuli
Multichannel electrode	NeuroNexus Technologies	A4 × 8–5mm-200-200-413	4-shank 32-channel electrode array
Potentiostat	CH Instruments	CHI660B	Deposits electrode coatings and performs cyclic voltammetry and EIS (used with CHI684)
Multiplexer	CH Instruments	CHI684	Switches between electrodes on the potentiostat
Disodium phosphate	Fluka	71644	Used in the test solution
3,4-Ethylenedioxythiophene (EDOT)	Sigma Aldrich	483028	An electrode coating material
para-Toluene sulfonate (Na_2pTS)	Sigma Aldrich	152536	An electrode coating material
Urethane	Sigma Aldrich	U2500	Used to anesthetize the animal
Silver/Silver chloride electrode	CH Instruments	CHI111	Used for testing the electrode *in vitro*
Platinum electrode	CH Instruments	MW4130	Used for testing the electrode *in vitro*
Motorized microdrive	Sutter Instruments	DR1000	To control the electrode array position during surgery
Enzymatic cleaner	Advanced Medical Optics	Ultrazyme	Cleans the protein off the electrode array after implantation
Acoustic enclosure	TMC Ametek	83-501	Isolates the animal from acoustic and electrical noise
Stereotaxic frame	David Kopf Instruments	1430	Secures and positions the animal
Temperature controller	World Precision Instruments	ATC1000	Controls the animal temperature
Bone drill	KaVo Dental	K5Plus	Used to perform the craniectomy

Aspirator	Flaem	Suction pro	Used to perform the craniectomy

