

Materials List for:

# Acute *In Vivo* Electrophysiological Recordings of Local Field Potentials and Multi-unit Activity from the Hyperdirect Pathway in Anesthetized Rats

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URL: <https://www.jove.com/video/55940>

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## Materials

Name	Company	Catalog Number	Comments
Ag/AgCl custom epidural electrodes	Goodfellow GmbH D-61213 Bad Nauheim, Germany <a href="mailto:info@goodfellow.com">info@goodfellow.com</a>	Product-ID AG005127 for 99.99% silver wire	Ag/AgCl electrodes will allow for better signal quality, but may only be used in acute experiments. Possible replacement: Stainless steel electrodes
Stereotaxic holder with acrylic block	David Kopf Instruments, 7324 Elmo Street, Tujunga, CA 91042, USA	Product ID Model 1770 Standard Electrode Holder	Make sure the acrylic block has recesses which suit the electrode setup for the desired target. Acrylic blocks can easily be modified with a file to obtain the desired configuration. Possible replacement: Self-constructed electrode holders
Tungsten microwire electrodes 1.5 MΩ impedance	Microprobes.com 18247-D Flower Hill Way Gaithersburg, Maryland, 20879 USA	Product-ID WE3ST31.5A5-250um	The 1.5 MΩ is necessary to record MUA and LFP at the same time. Possible replacement: Microelectrodes of different materials can be used. The electrodes have to be straight, robust and as thin as possible.
Rat alignment tool	David Kopf Instruments, 7324 Elmo Street, Tujunga, CA 91042, USA	Product ID Model 944 Rat Alignment Tool	Allows the exact orientation of the brain to match stereotaxic atlases. Possible replacement: Stereotaxic holder with a cannula
Two-component dental acrylic	Associated Dental Products Ltd. Kemdent Works, Purton, Swindon Wiltshire, SN5 4HT, United Kingdom	Simplex Rapid Powder Clear 225g, Product code: ACR803; Simplex Rapid Liquid 150ml, Product code: ACR920	Depending in the electrodes used, superglue might be an easy alternative, if the electrodes are small and lightweight. Possible replacement: Superglue (Cyanacrylate-based)
Faraday cage	Self-construction		A proper Faraday cage will be the best protection from electromagnetic artifacts, but everything which can be formed into a box shape or applied to a frame and is made of conductive material may help. Possible replacement: Aluminum foil or copper mesh
Electrophysiological setup with recording software and online spike-sorting capabilities	OmniPlex <sup>®</sup> Neural Data Acquisition System Plexon Inc 6500 Greenville Avenue, Suite 700 Dallas, Texas 75206 USA		Offline sorting software is a potential alternative, multiple scripts and softwares can be found for free in the open source community.