

Materials List for:

# Application of Automated Image-guided Patch Clamp for the Study of Neurons in Brain Slices

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URL: <https://www.jove.com/video/56010>

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## Materials

| Name   | Company                 | Catalog Number                   | Comments   |
|--|-------------------------|----------------------------------|--|
| CCD Camera                                     | QImaging                | Rolera Bolt                      |  |
| Electrophysiology rig                          | Scientifica             | SliceScope Pro 2000              | Include microscope and manipulators. The manufacturer provided manipulator control software demonstrated in this manuscript is "Linlab2".        |
| Amplifier                                      | Molecular Devices       | MultiClamp 700B                  | computer-controlled microelectrode amplifier   |
| Digitizer                                      | Molecular Devices       | Axon Digidata 1550               |  |
| LED light source                               | Cool LED                | pE-100                           | 488 nm wavelength  |
| Data acquisition board                         | Measurement Computing   | USB1208-FS                       | Secondary DAQ. See manual at : <a href="http://www.mccdaq.com/pdfs/manuals/USB-1208FS.pdf">http://www.mccdaq.com/pdfs/manuals/USB-1208FS.pdf</a> |
| Solenoid valves                                | The Lee Co.             | LHDA0531115H                     |  |
| Air pump                                       | Virtual industry        | VMP1625MX-12-90-CH               |  |
| Air pressure sensor                            | Freescale semiconductor | MPXV7025G                        |  |
| Slice hold-down                                | Warner instruments      | 64-1415 (SHD-40/2)               | Slice Anchor Kit, Flat for RC-40 Chamber, 2.0 mm, 19.7 mm  |
| Python   | Anaconda                | version 2.7 (32-bit for windows) | <a href="https://www.continuum.io/downloads">https://www.continuum.io/downloads</a>  |
| Screw Terminals<br>(2-Pin)                     | Sparkfun                | PRT - 08084                      | Screw Terminals 3.5 mm Pitch (2-Pin)   |
| N-Channel MOSFET 60 V 30 A                     | Sparkfun                | COM - 10213                      |  |
| DIP Sockets Solder Tail - 8-Pin                | Sparkfun                | PRT-07937                        |  |
| LED - Basic Red 5 mm                           | Sparkfun                | COM-09590                        |  |
| LED - Basic Green 5mm                          | Sparkfun                | COM-09592                        |  |
| DC Barrel Power Jack/Connector (SMD)           | Sparkfun                | PRT-12748                        |  |
| Wall Adapter Power Supply - 12 V DC 600 mA     | Sparkfun                | TOL-09442                        |  |
| Hook-Up Wire - Assortment (Solid Core, 22 AWG) | Sparkfun                | PRT-11367                        |  |
| Locking Male x Female x Female Stopcock        | ARK-PLAS                | RCX10-GP0                        |  |
| Fisherbrand Tygon S3 E-3603 Flexible Tubings   | Fisher scientific       | 14-171-129                       | Outer Diameter: 1/8 in.<br>Inner Diameter: 1/16 in.  |

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|------------------------------------|-------------------|-----------------|--|
| BNC male to BNC male coaxial cable | Belkin Components | F3K101-06-E     |  |
| 560 Ohm Resistor (5% tolerance)    | Radioshack        | 2711116         |  |
| Picospritzer                       | General Valve     | Picospritzer II |  |