

DEPARTMENT OF VETERANS AFFAIRS

Brand Name Justification IAW [FAR 13.106-1](#)

For

Over Micro-Purchase Threshold but Not Exceeding the SAT (\$250K)

Acquisition Plan Action ID: 36C260-19-AP-4165

1. **Contracting Activity:** Department of Veterans Affairs, NCO 20 on behalf of Portland OR, VA Medical Center Neuroscience Research Lab requires a specific name brand/model of microelectrode amplifiers for cell physiology experiments.
2. **Brief Description of Supplies/ Services required and the intended use/Estimated Amount:** The equipment is the Molecular Devices/Axon Instruments microelectrode amplifiers. These amplifiers record electrical signals from single nerve cells in acutely prepared brain tissue slices. In these slices, individual live cells can be identified with a high-power microscope, but in order to make a single-cell electrophysiologic recording, these cells need to be touched with an extremely fine pointed glass micropipette (approximate tip diameter is 1/1000 of a millimeter, and cells are approximately 10-30 micrometers in diameter). This pipette is then adjusted using a variety of techniques to gain access into the interior of the cell, while keeping the cell alive and functional. The electrical signals generated by single cells are very small (millivolts) and measuring them accurately is very challenging, particularly as electrical fields from all equipment, building wiring, cell phones, etc., can interfere massively with the ability to detect these signals. Estimated amount: under \$75K.
3. **Unique characteristics that limit availability to only one source, with the reason no other supplies or services can be used:** The Molecular Devices amplifiers being purchased must process these signals accurately and with minimal noise. The ability to shield out extraneous signals and not have the electronics within the actual amplifier because interference is an absolute requirement. Each amplifier shall come with a preamplifier ("headstage") which contains wiring and adapters that hold individual glass micropipettes and allows wires to be inserted *inside* the pipettes, as well as electronics that pre-amplify the signals to minimize noise levels. The absolute noise level on these amplifiers is in the low femtoampere range (another absolute requirement). They must also contain a specialized dovetail mount that allows them to be connected to our micromanipulation systems (another absolute requirement) and has the connectivity and electronic interfacing capabilities to be controlled by computers in the lab. Finally, each controller/amplifier box shall be only 89 mm high to fit into existing equipment, which is required for appropriate electrical shielding.

The two amplifiers are used for different types of experiments: the Multiclamp 700B is for recording from two cells simultaneously, and the Axopatch 200B is for recording from single cells and or individual

ion channels. They need to be able to perform both single cell voltage clamp and current clamp recordings and switch seamlessly between the two modes. They need to be able to control seal testing, have external inputs for voltage control, and have BNC input/outputs.

These amplifiers connect to our electrode holders and data acquisition equipment and shall be compatible with our system. Specifically, the two-cell amplifier needs to be computer controlled and compatible with Axon/Multiclamp Commander software, which can be controlled by additional custom-written Igor Pro software in the lab. Potentially, other amplifiers not only lack the degree of precision, but would also necessitate buying additional components and take up more space in the very tightly confined area immediately around the electrophysiology microscope.

4. Description of market research conducted and results or statement why it was not conducted:

Extensive research was conducted on GSA, FSS, SEWP GWAC and mandatory VA contracts. It appears that these items requested are not available on any current Government contracts. The manufacturer of the requested equipment does work with authorized small business vendors. However due to the fact that there is no SBA non-manufacturer waiver for this equipment, the VA "Rule of two for SDVOSB" cannot be met in this situation and will be solicited as a small business set-a-side to authorized sellers only.

5. Contracting Officer's Certification: *Purchase is approved in accordance with FAR13.106-1(b). I certify that the foregoing justification is accurate and complete to the best of my knowledge and belief.*

Name:

Title:

Date