

Materials List for:

## Membrane Potentials, Synaptic Responses, Neuronal Circuitry, Neuromodulation and Muscle Histology Using the Crayfish: Student Laboratory Exercises

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### Materials

1. Crayfish (*Procambarus clarkii*). Atchafalaya Biological Supply Co., Raceland, LA., USA.
2. Standard crayfish saline: Modified from Van Harrevel'd's solution (1936). (in mM) 205 NaCl; 5.3 KCl; 13.5 CaCl<sub>2</sub>·2H<sub>2</sub>O; 2.45 MgCl<sub>2</sub>·6H<sub>2</sub>O; 5 HEPES and adjusted to pH 7.4. Serotonin, glutamate and dopamine are made in crayfish saline. Bouin's fixative solution was used directly and methylene blue is made in crayfish saline. All chemicals are obtained from Sigma chemical company (St. Louis, MO).
3. Dissection tools: Fine #5 tweezers, fine scissors, knife blade holder, #26002-20 insect pins (all obtained from Fine Science Tools (USA), Inc., 373-G Vintage Park Drive, Foster City, CA 94404-1139).
4. Sylgard-bottomed glass dish
5. Beakers (to hold chemical solutions)
6. Electrical signals are recorded on line to a [PowerLab 26T](#) interface to a computer (ADInstruments, Colorado Springs, CO, USA). We use standard [software from ADInstruments named Chart or Scope](#).
7. Model 3000 AC/DC amplifier for intracellular as well as extracellular recordings can be used.
8. Dissecting microscope with zoom function for intracellular recordings. For focal recording on visualized terminals a compound microscope with upright objectives (4 x and 20X) is used. One needs a Hg light source.
9. For intracellular recordings we use glass capillary tubing (catalogue # 30-31-0 from FHC, Brunswick, ME, 04011, USA). The intracellular electrode should have a resistance of 20 to 30 mOhm. Intracellular electrodes were filled with 3 M KCl.
10. A suction electrode is used to record extracellular signals.
11. Faraday cage.
12. High Intensity Illuminator (light source).
13. Micromanipulator