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Single unit electrophysiology Laboratory

The work in this lab is devoted to extracellular single-unit recording of neural activity in different brain regions. Particular attention is given to brain regions implicated in pain modulatory systems and addiction. We place anesthetized rats in

a stereotaxic instrument, and approach to the predefined position within the nucleus of interest to record neural activity associated to adjacent neuronal cells. Only single cells having a consistent spike amplitude and waveform during the experimental procedure are studied. Spikes reflecting neural activity are isolated from background activity. An increase or decrease of firing rate over two-fold of the standard deviation of the baseline activity for at least 3 consecutive bins (i.e., 3 min) is considered as an excitatory or inhibitory response, respectively. Event-related firing rate and pattern are analyzed. After the experiment, the rat is perfused transcardially, brain is removed and fixed followed by preparing coronal sections and staining for histological verification of the site of microinjection and/or recording.

