

Electrophysiology is used to amplify and measure bio-electrical signals caused by movement of ions through cellular ion channels. Because many pathophysiological conditions in the CNS and elsewhere (PNS, heart, cultured neurons) arise from alterations to ion channel activity, electrophysiology provides an invaluable tool to better understand these conditions and to develop drugs to treat them.

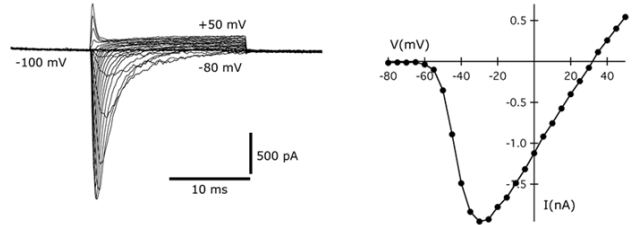
CNS|CRO offers a full complement of electrophysiological services which can be tailored to meet the specific needs of R&D programs.

In vitro electrophysiology:

CNS|CRO uses a rapid micro perfusion system facilitating dose-response experiments and enabling the assessment of drugs with fast kinetics.

Manual Whole-cell patch clamp

- regarded as the gold standard in ion channel research
- ideal for characterizing and optimizing preclinical drug candidates
- especially useful for research involving excitable cells such as neurons and cardiomyocytes
- available in primary cultured neurons, cell lines expressing ligand or voltage-gated channels, and brain slices.



Field potential recordings

- performed in brain slices, these recordings allow assessments of cortical network activity
- Useful for investigating integrative excitatory and inhibitory signals in neuronal populations

In vivo electrophysiology:

This technique allows for long-term investigation of electrophysiological parameters.

Ideally suited for pain & peripheral neuropathy studies

- allows assessment of nerve conduction in both peripheral and central nervous systems
- provides evaluation of nerve damage and/or nerve regeneration
- assessment of electromyogram (EMG) activity available as a separate measure, or in combination with afferent conductivity data
- may be performed in a variety of species (rat, mouse, rabbit) and animal models of disease or injury (e.g. neuropathic pain, peripheral neuropathy, spinal cord injury)

