neuroservices ALLIANCE

THE **CNS ELECTROPHYSIOLOGY CRO**

In Vivo **Spinal Cord & DRG Electrophysiology**

Scan to see our documentation

Our Solutions

Spinal cord and DRG recordings can be used to validate new pain therapeutic targets and assess drug efficacy in recognized pain models, thanks to robust electrophysiological data.
his technique represents an essential method to evaluate the analgesic potential of drug candidates.
Recordings are performed extracellularly in deeply anesthetized rodents under controlled physiological conditions.

- Pain modulating molecule in vivo assessment
- Target validation
- Efficacy determination
- MOA characterization

About

Our in vivo Spinal Cord & DRG Electrophysiology recording platform is hosted at E-Phys, an independant CRO founded in 2012 and located in Clermont-Ferrand, France.
E-Phys has many years of experience in the drug discovery field and collaborates with experts from CROs and large pharmaceutical companies.

Contact us

NsA - In Vitro Brain Slice Electrophysiology

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Techniques & models

Lamina III-V dynamic wide range and nociceptive specific neurons

As Lamina III-V neurons receive dense input from peripheral mechanoreceptors and nociceptors, their recording can be used to assess the analgesic activity of both peripheral and central targets.

- Recording of lamina III-V neurons is usually used for acute pharmacological studies.

Lamina I spinoparabrachial (SPB) neurons

Lamina I SPB neurons are identified using antidromic stimulation from the parabrachial area. Lamina I SPB neurons play an essential role in the affective component of pain.

- Recording of Lamina I SPB neurons is best to evaluatethe effect of chronic pain conditions and the corresponding treatment with analgesic drug candidates.

Pathophysiological models

Recordings are performed in controls and in animals with various experimental pathophysiological conditions (e.g. complete Freund's adjuvant induced inflamation, oxaliplatin induced polyneuropathy, nerve constriction induced mononeuropathy, etc...).

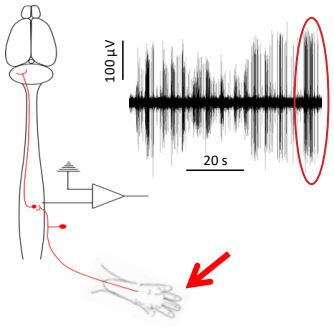
- Models can be developped on demand.

Sample **Data**

Search strategies

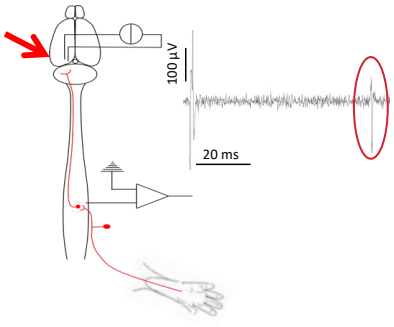
Experiments are performed using the same rig in identical conditions

Spinal Cord lamina III-V



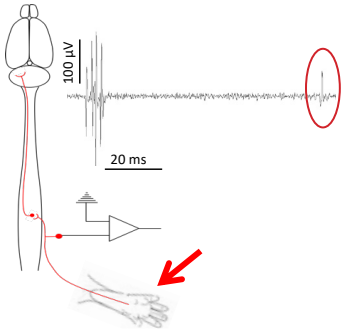
Spinal Cord lamina I

Antidromic search
Electrical



Dorsal Root Ganglia

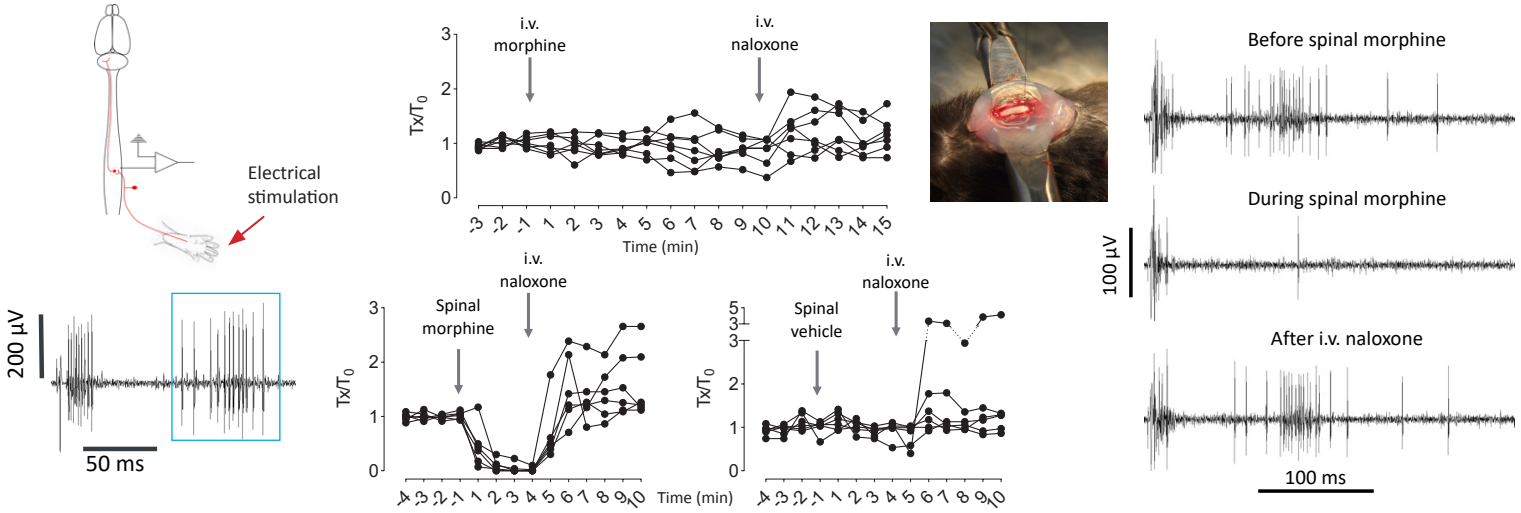
Orthodromic search
Electrical



Spinal pharmacology

Opiates: local morphine application in mice

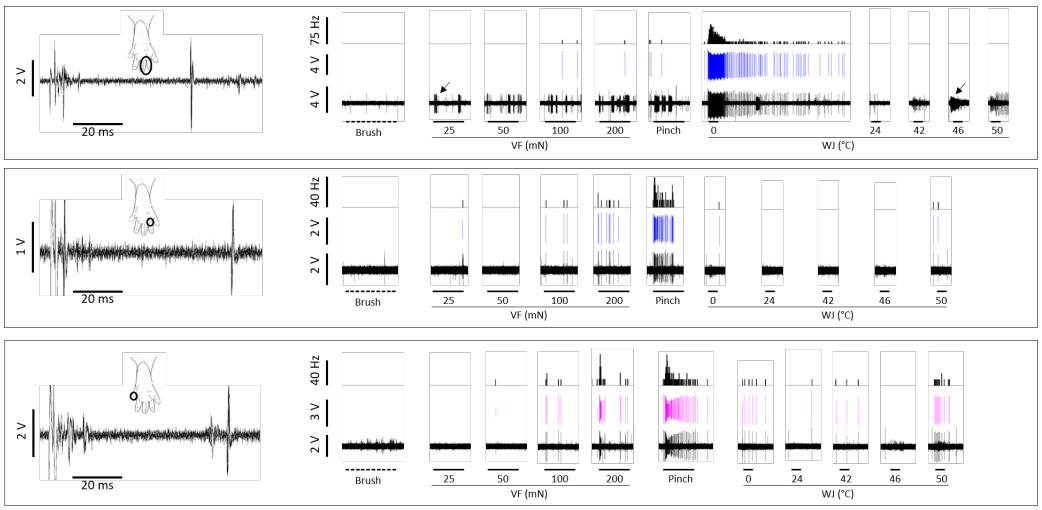
Lamina III-V spinal neurons of unknown projection were recorded in anesthetized mice (n=6-7 per group).

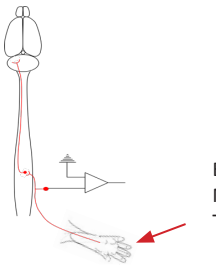


C fibre related responses to electrical stimulation (□) were measured as number of action potentials and expressed as the ratio of response after injection/response before injection. Morphine (1 mM) or vehicle was applied on the spinal cord and naloxone (3 mg/kg) was injected i.v.

DRG neurons

Example of recordings





Overlay of responses to 5 successive electrical stimulations (left) and responses to mechanical and thermal stimulations (right) of 3 unmyelinated nociceptors characterized as cold-specific, mechano-specific and polymodal.