

### Cellular / Slice electrophysiology

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#### Organisation

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# SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Species from which cells/tissues/organs are derived	Mice / Rat
Type of cells/tissues/organs	Brain / Neuronal cell

# DESCRIPTION

#### Method keywords

Patch clamp Field potential Brain slice

#### Scientific area keywords

Electrophysiology neuroscience Physiology

#### **Method description**

In this method, it is possible to use active/viable animal or human brain slices / cells (normal or disease model) to study the effects of different drugs on brain cells (neuron or glia) in diverse brain region.

#### Lab equipment

Vibration isolation table with Faraday cage ;

Signal amplifier ; Digitizer ; Micromanipulator ; IR-DIC Microscope ; Perfusion pump ; Glass pipette microforge.

### Method status

History of use Published in peer reviewed journal

# **PROS, CONS & FUTURE POTENTIAL**

### Advantages

Reduce animal use ; Any drugs can be tested before clinical studies ; Possibility of sharing same animal for different experiments depending on target brain regions.

# Challenges

Require sophisticated instruments which are expensive ; Require long training before successful implementation.

# REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

### References

Fanny Sandrine Martineau, Surajit Sahu, Vanessa Plantier, Emmanuelle Buhler, Fabienne Schaller, Lauriane Fournier, Geneviève Chazal, Hiroshi Kawasaki, Alfonso Represa, Françoise Watrin, Jean-Bernard Manent, Correct Laminar Positioning in the Neocortex Influences Proper Dendritic and Synaptic Development, Cerebral Cortex, Volume 28, Issue 8, August 2018, Pages 2976–2990, https://doi.org/10.1093/cercor/bhy113

### Associated documents

segev2016.pdf

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