

# Cellular / Slice electrophysiology

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## Organisation

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**Geographical Area** Brussels Region

## SCOPE OF THE METHOD

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