

# **Электрофизиологические методы исследований**

**Nikolai I. Kononenko**

Department of General Physiology of Nervous System,  
Bogomoletz Institute of Physiology,  
Kiev, Ukraine

1.

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2.

«Patch-clamp».

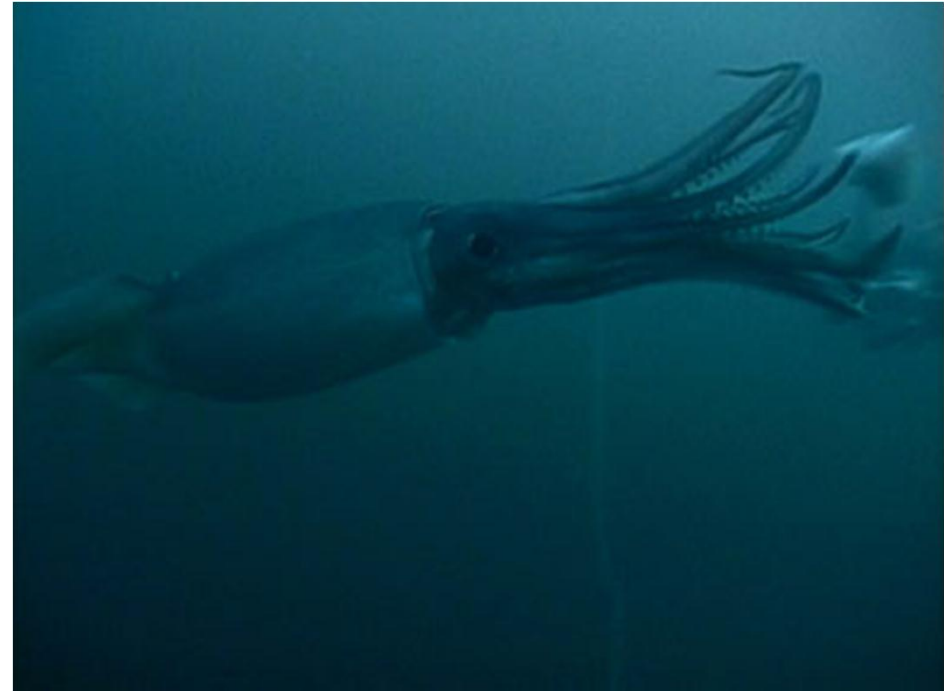
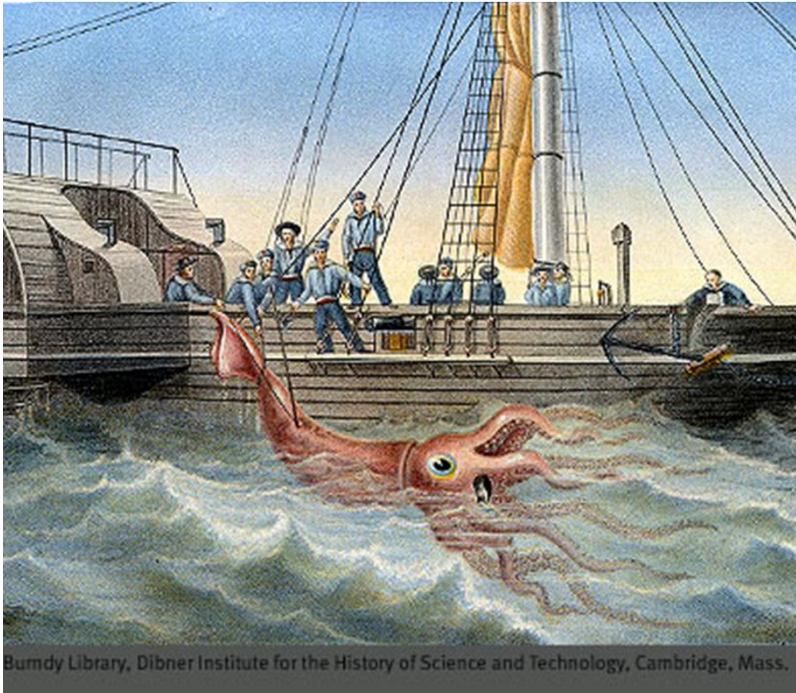
3.

▪

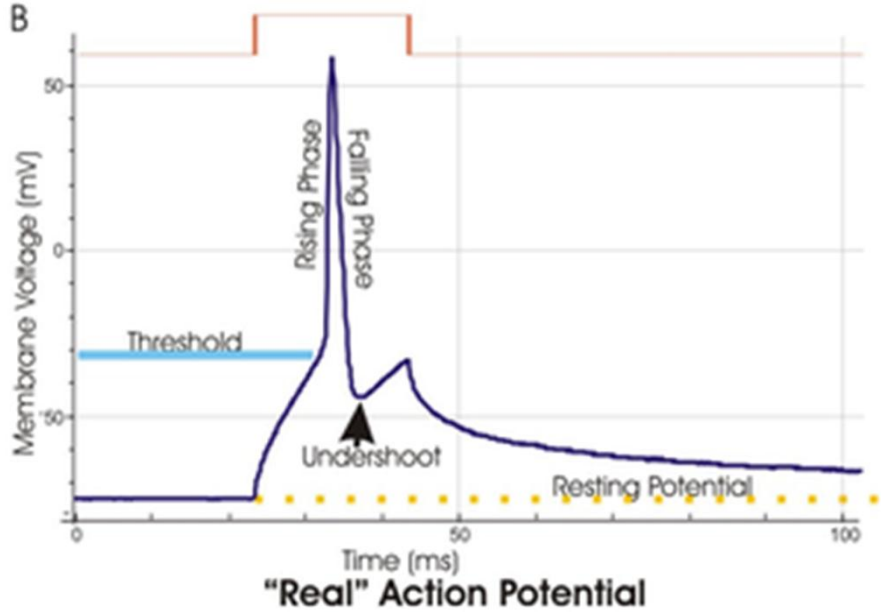
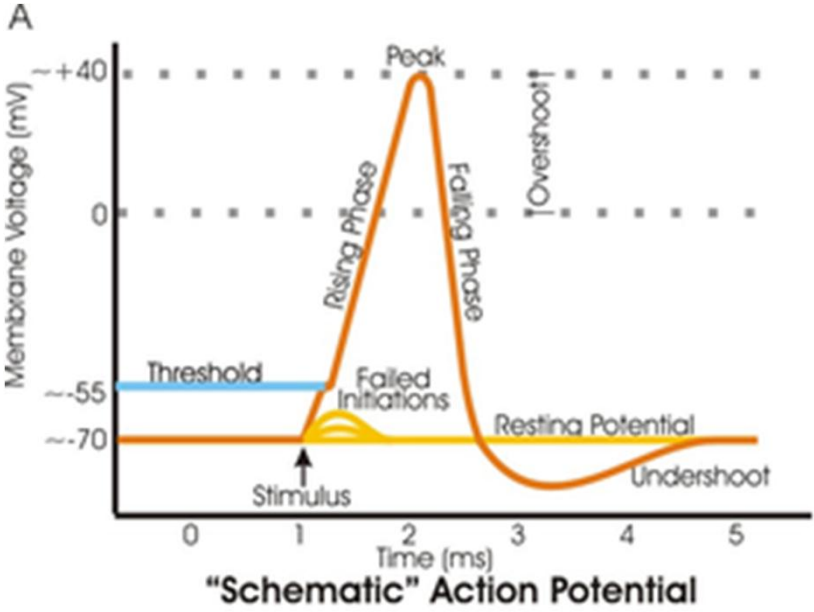
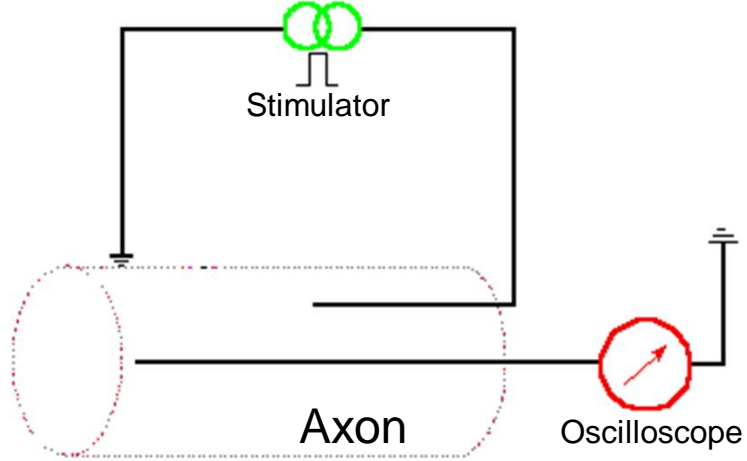
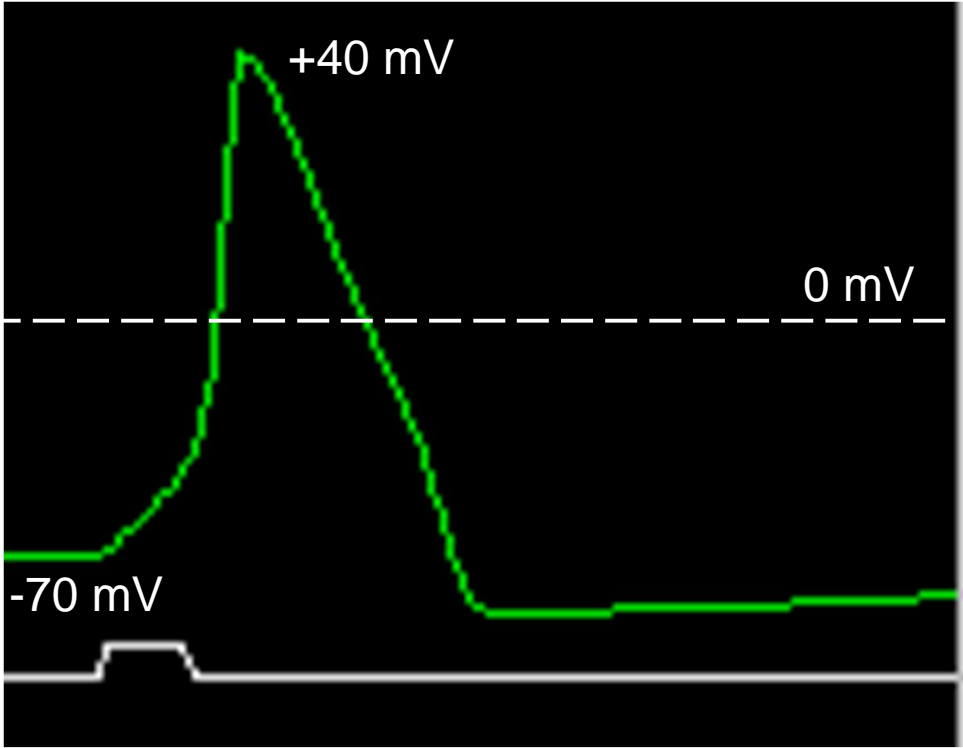
4.

▪

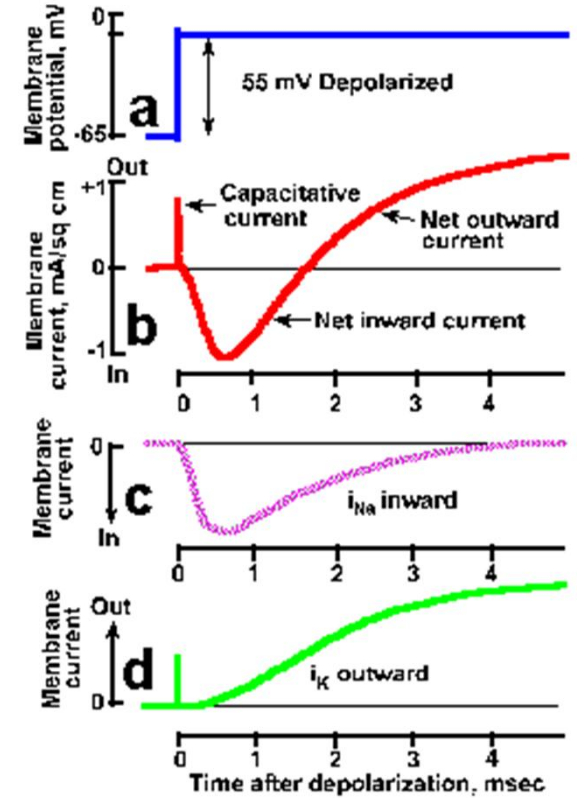
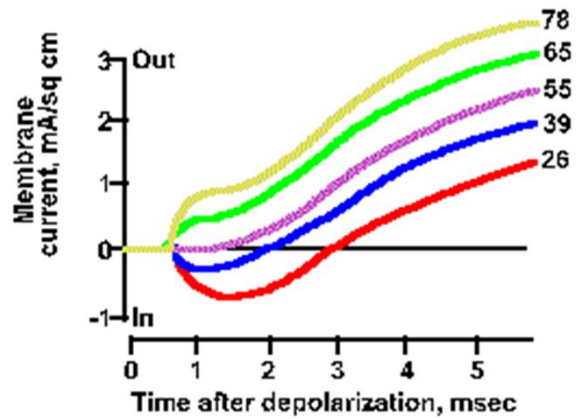
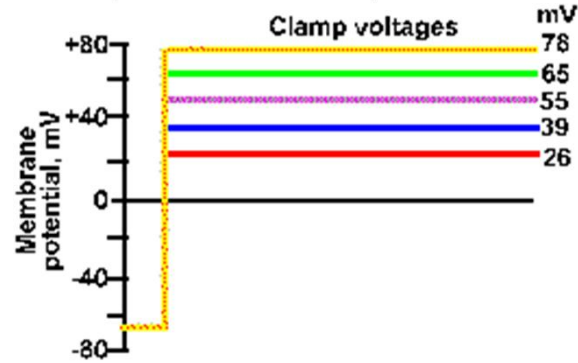
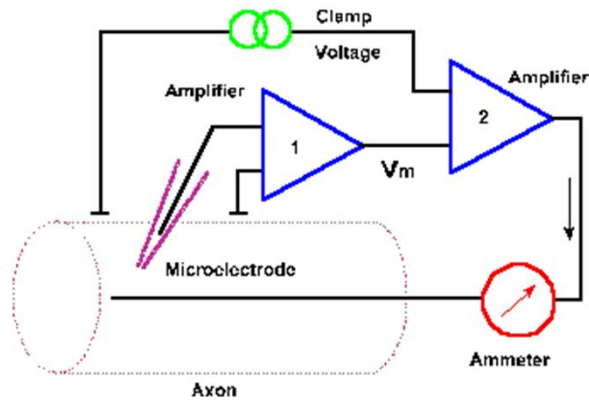
# The squid and its giant axon



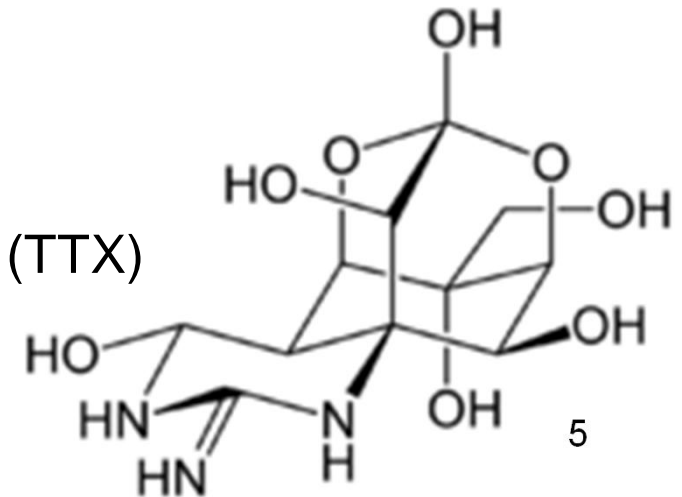
# Action potential in squid axon



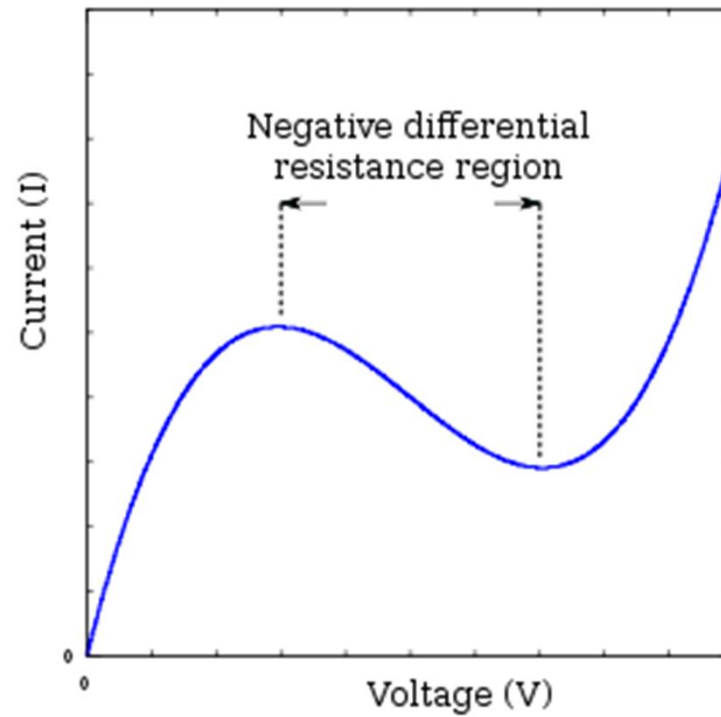
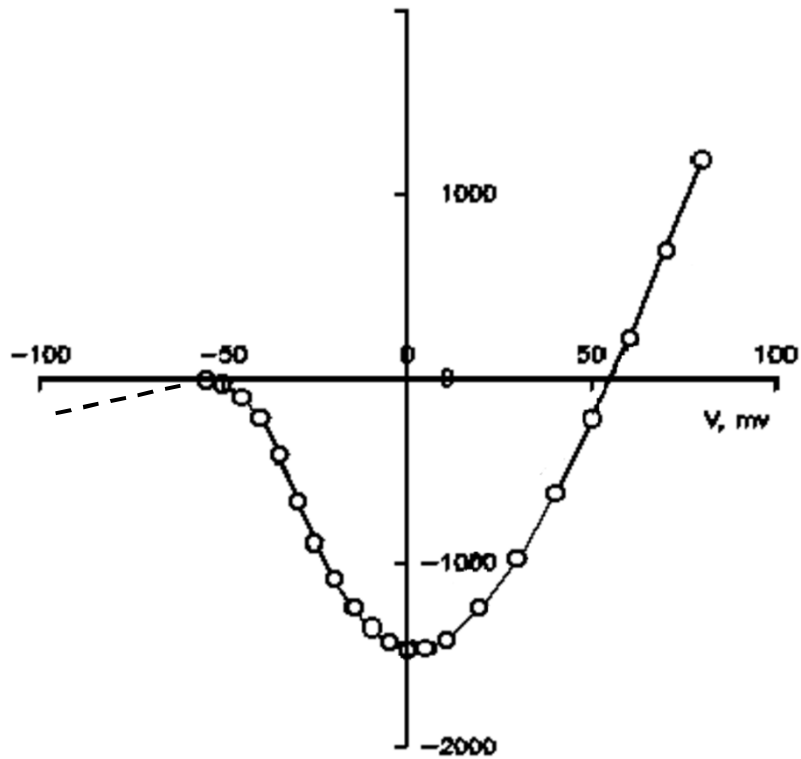
# Voltage clamp of squid axon, tetrodotoxin and Na current



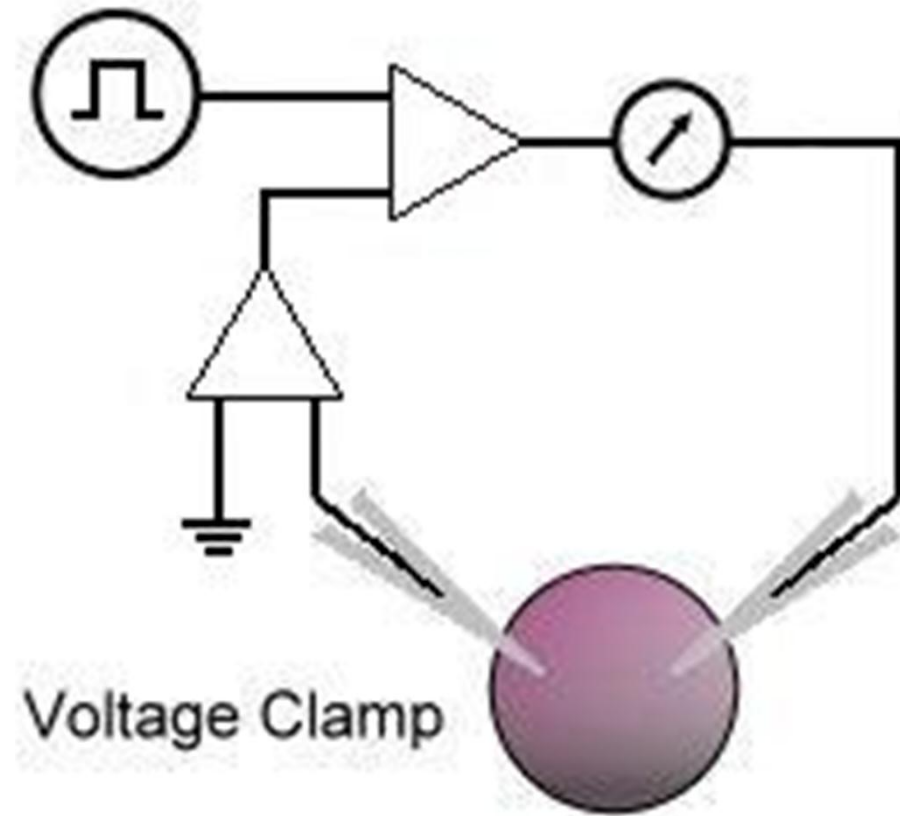
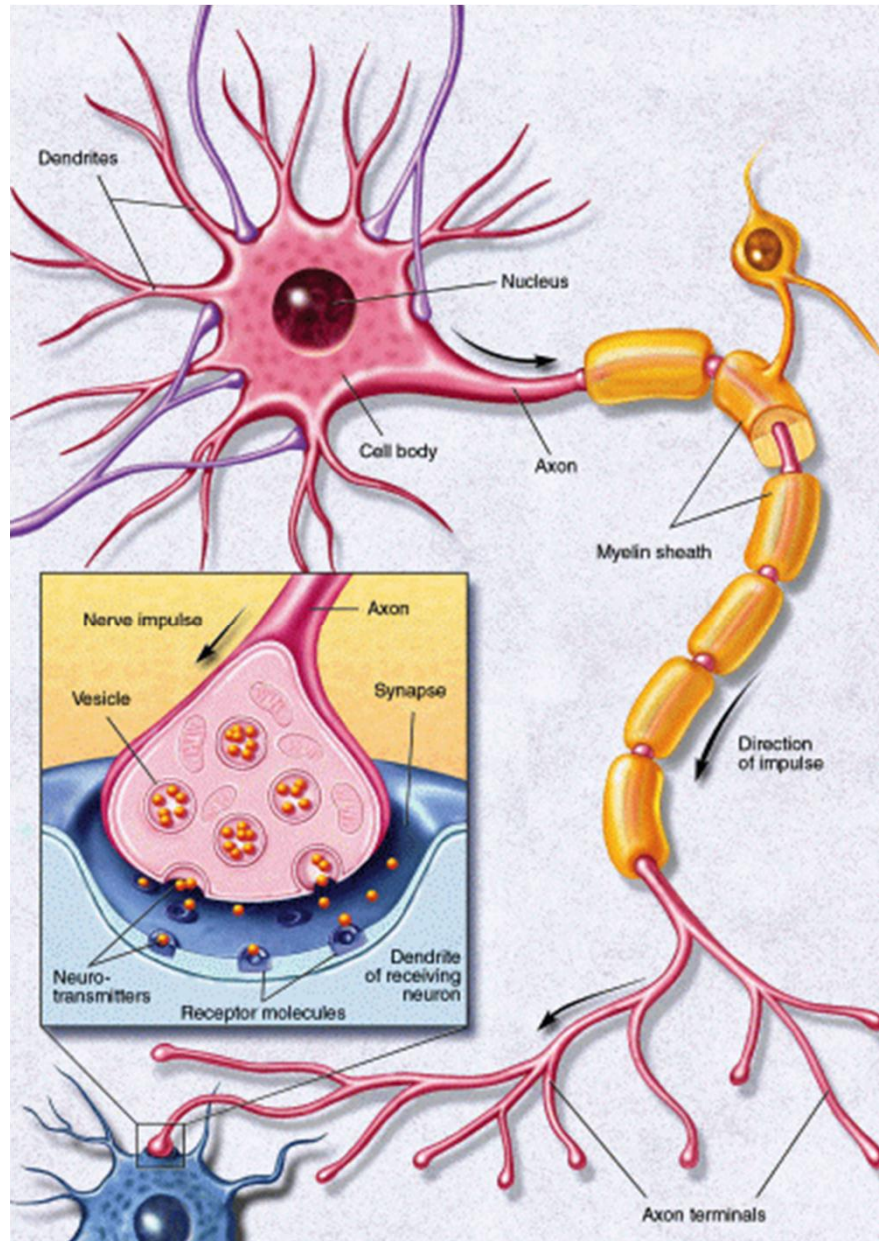
Tetrodotoxin (TTX)



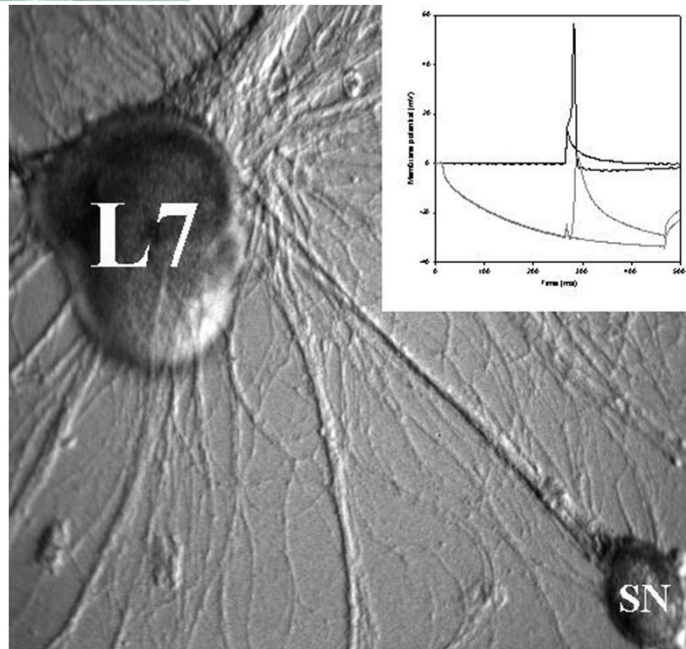
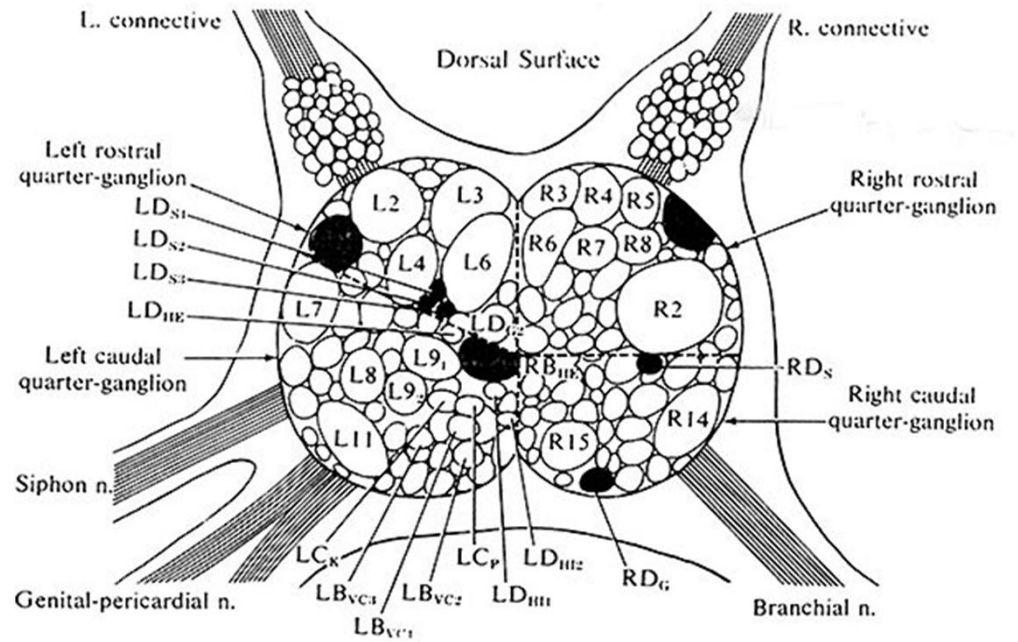
Negative resistance region, negative conductance, negative slope



# Neuron and voltage clamp of its membrane



# Aplysia and its giant neurons



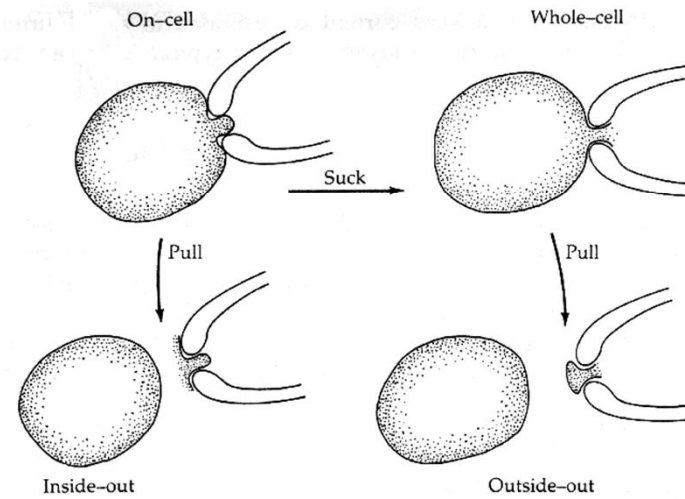


# Three modes of patch clamping

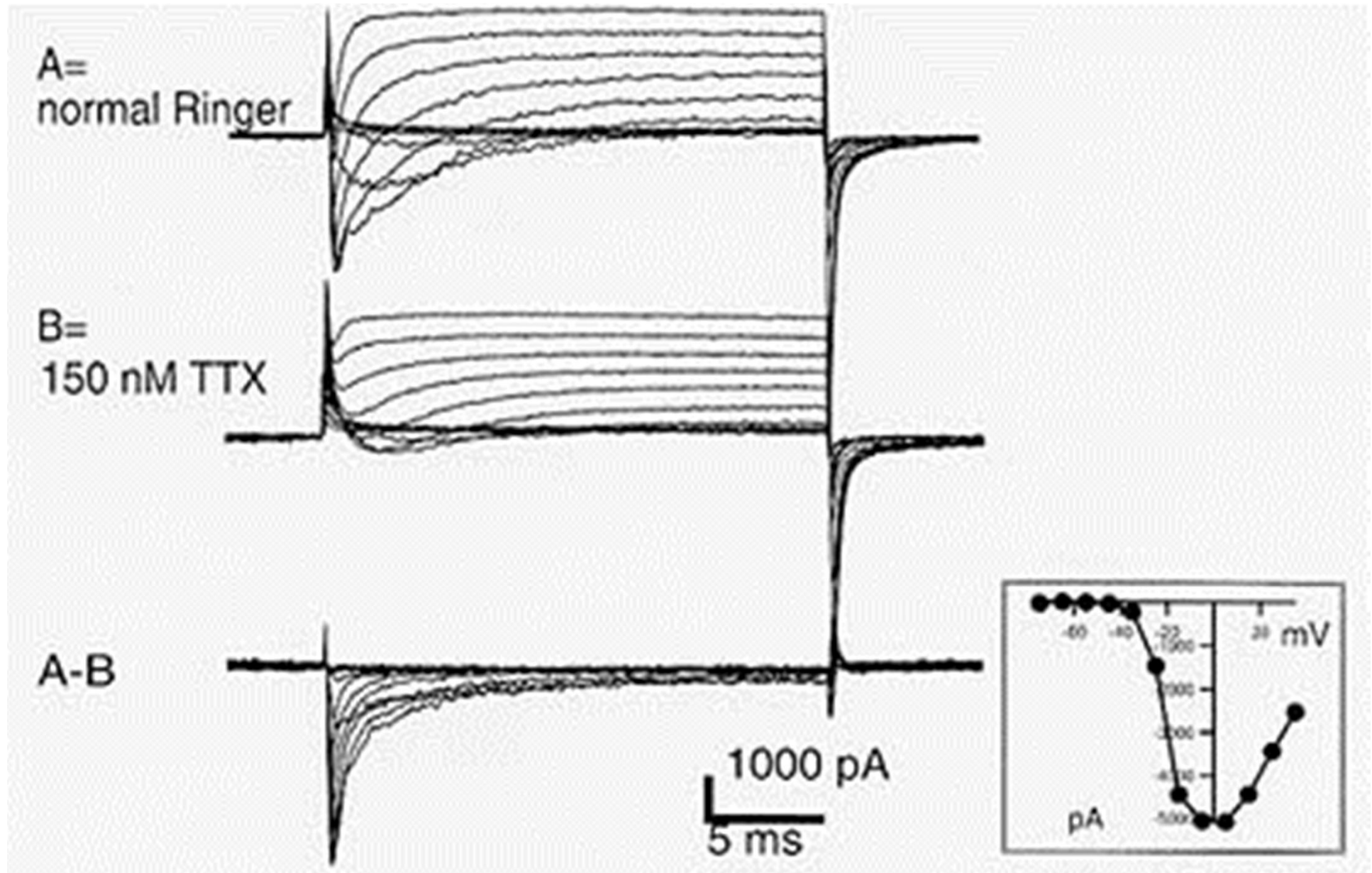


## Patch clamp recording

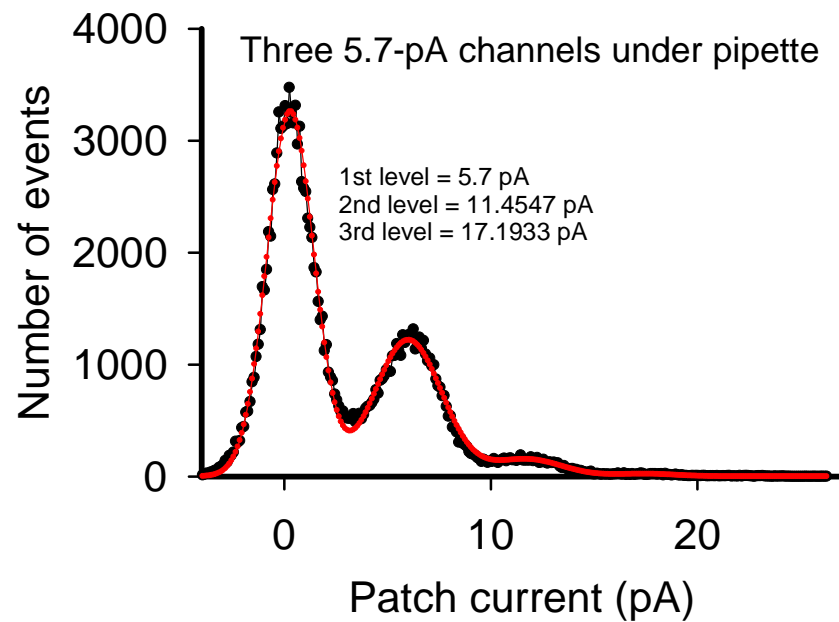
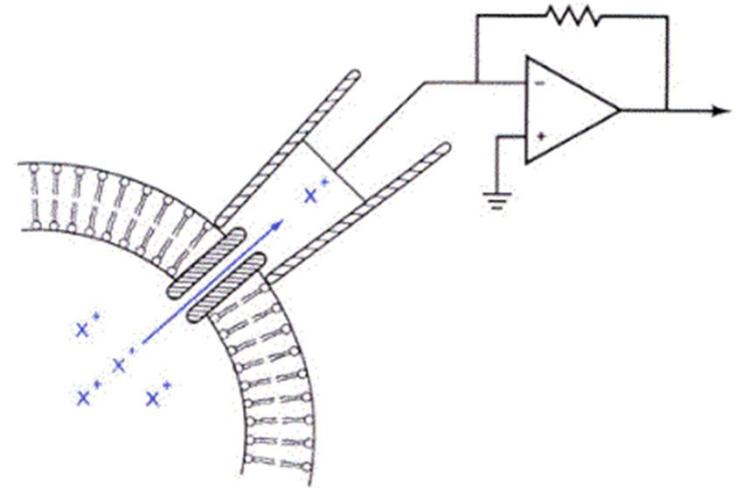
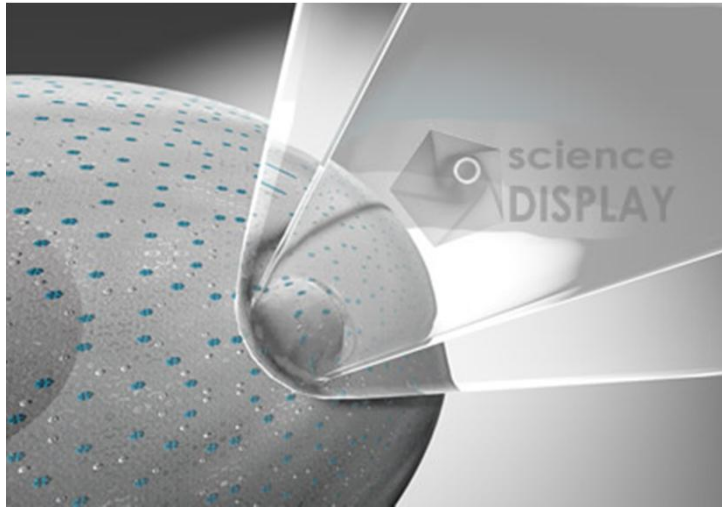
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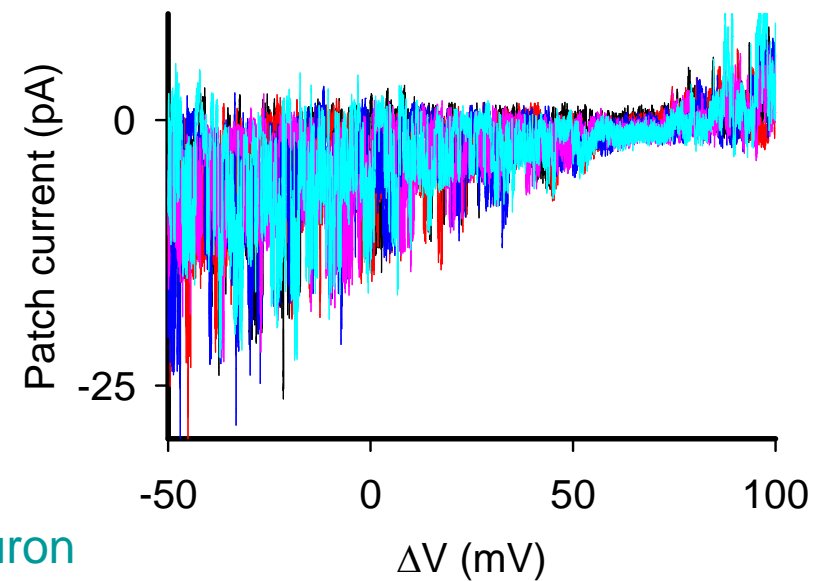
# Patch clamp recording of somal sodium currents from Purkinje neurons in slice preparation.



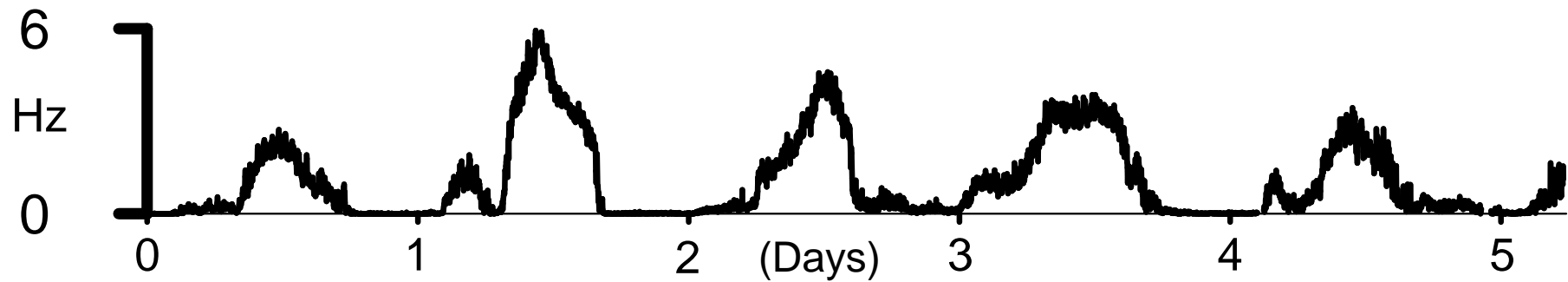
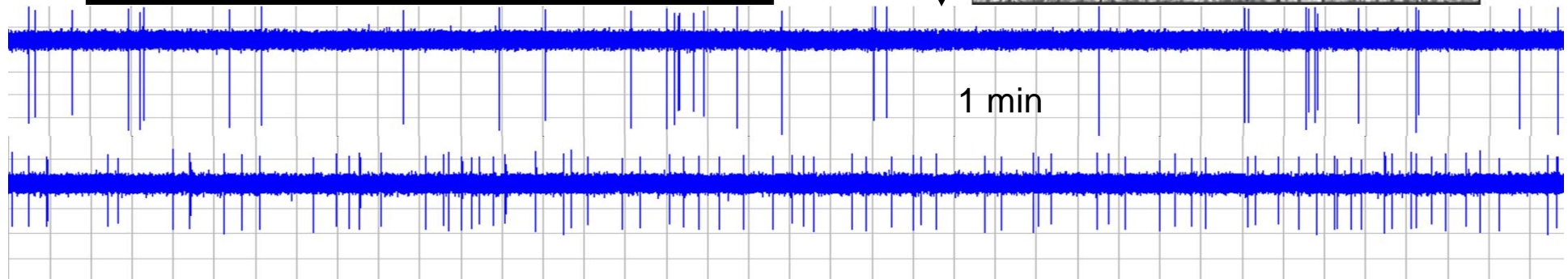
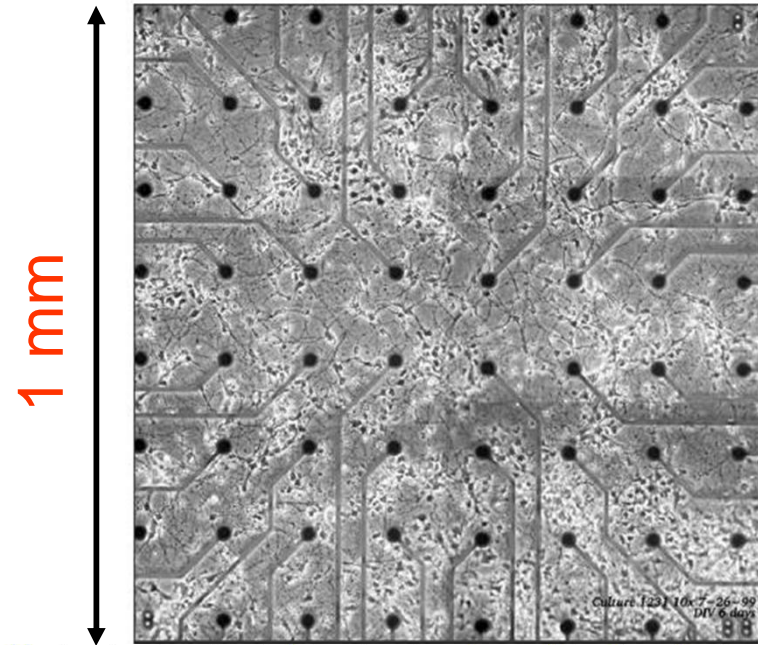
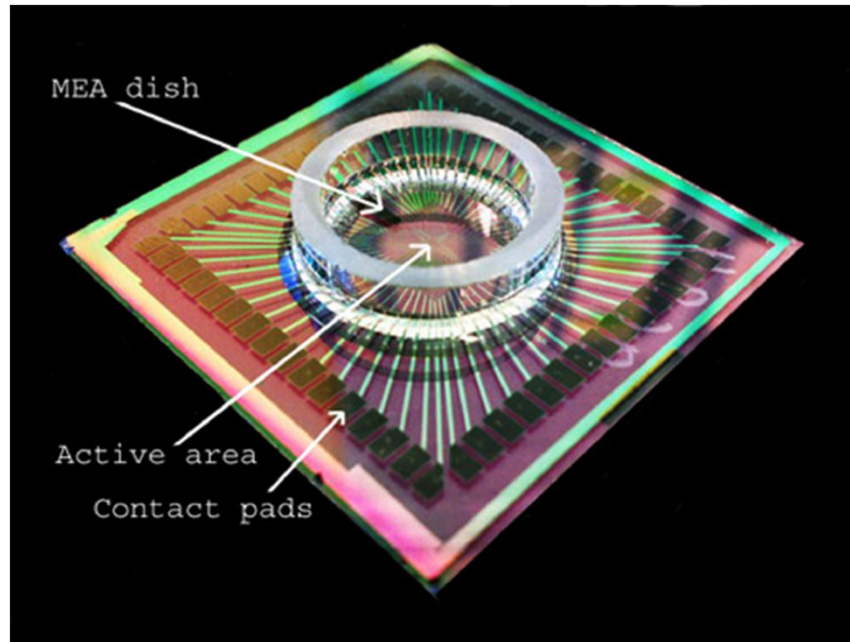
# On-cell recording of single channels



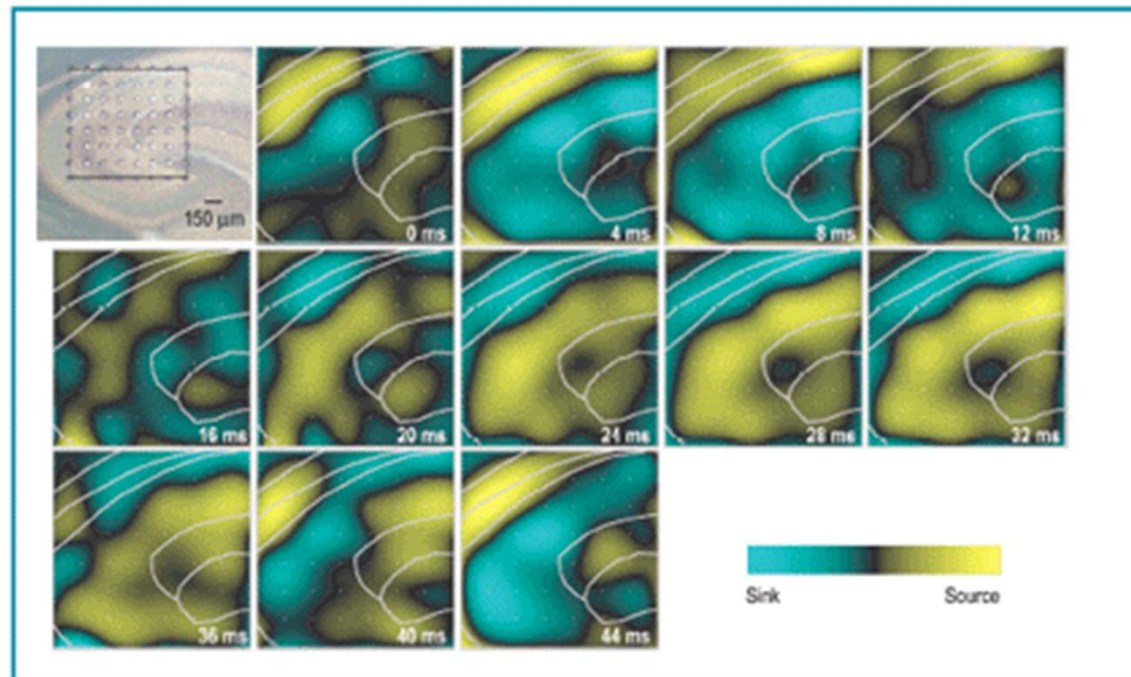
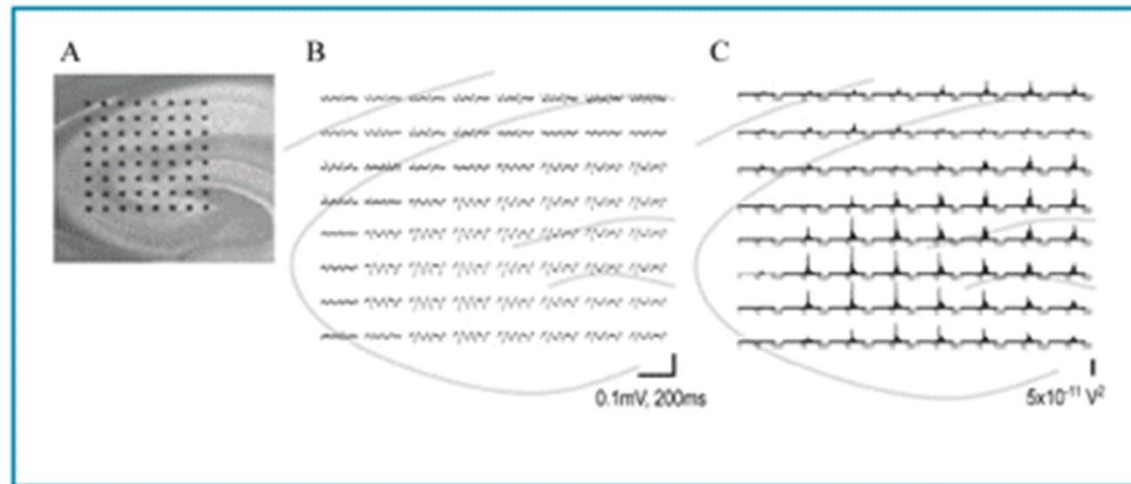
From 14  
Rat CA1 neuron



# Multielectrode array dish (MED)

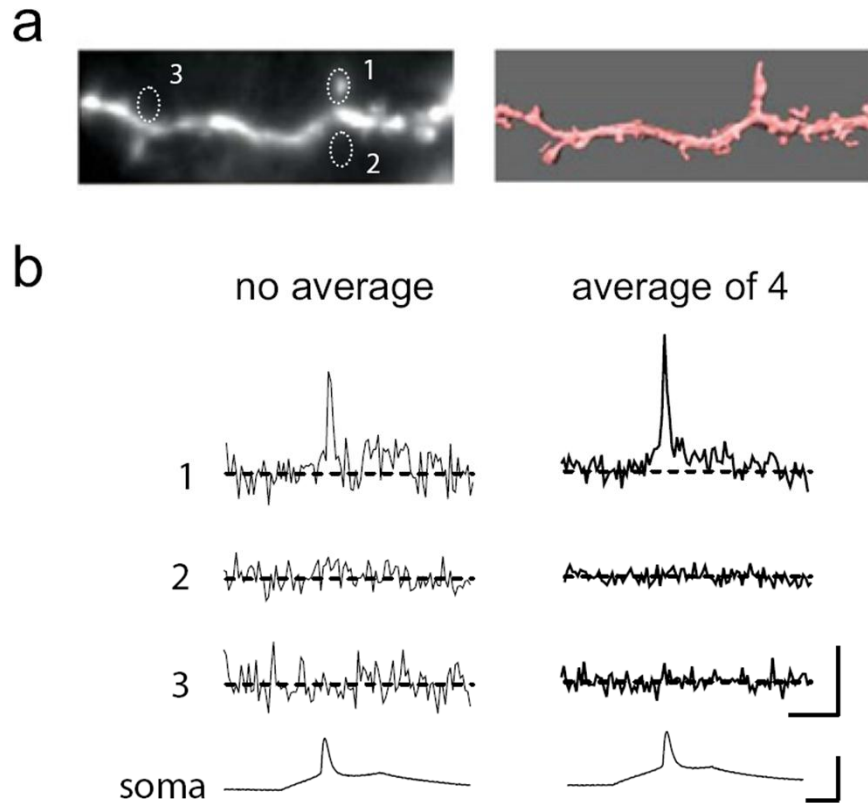


# 50 $\mu$ M carbachol-induced rhythmic activity in the hippocampus



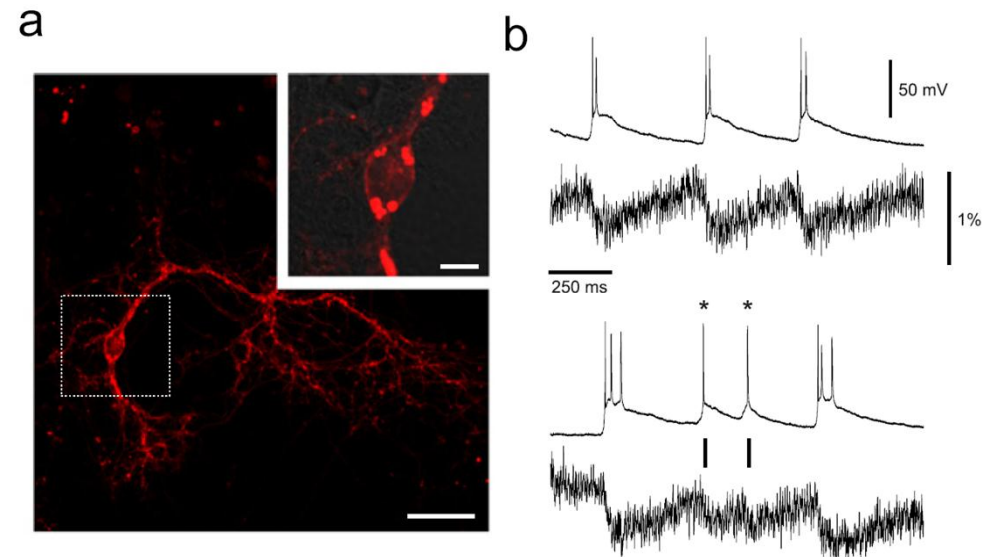
# Imaging voltage in neurons

## A



One-photon voltage imaging in individual dendritic spines of rat neurons with organic voltage-sensitive dye.

## B



VSFP3.1\_mOrange2 transfected into a cultured hippocampus neuron and expressed in the soma, axon, and dendrites