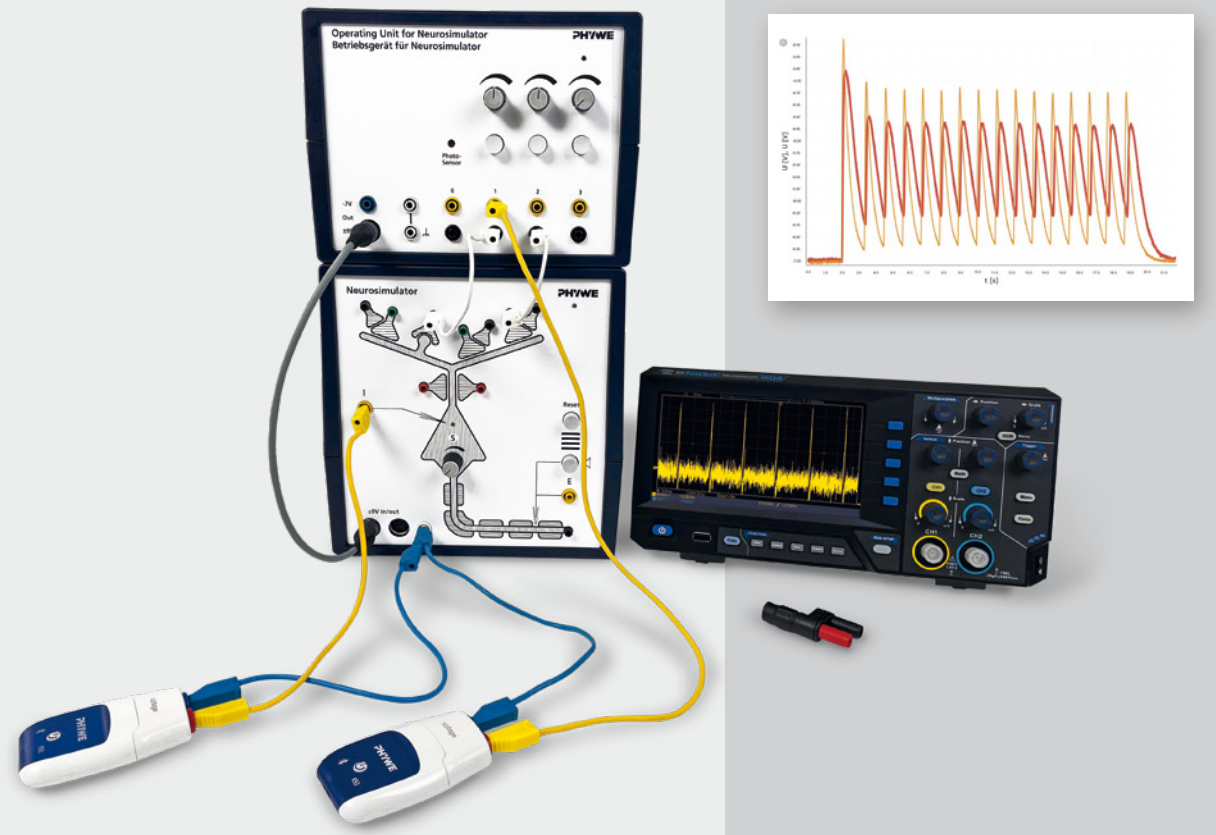
Cobra SMARTsense PHYWE

Neurobiology Set

Information Processing in Living Organisms



Neurobiology in the classroom: experiments for students

Teaching of neurobiological processes is an important curricular goal. It is about the function of nerve cells, excitatory and inhibitory synapses, action potential, excitation conduction, processing of sensory stimuli, spatial and temporal summation and much more.

You and your students can carry out all these topics in experiments with the neurobiology equipment set. With additional nerve cells, additional experiments on nerve cell interactions (e.g. conditioned reflex) and neuronal networks (e.g. internal clock, short-term memory) are possible.

The topic of neurobiology is all the more relevant because no other area of biology is currently the subject of so much research. Medicine hopes to use the research findings to treat widespread diseases such as Alzheimer's, Parkinson's, dementia, memory loss and pain.

Features

- Experiments for upper secondary school and university labcourses in biology and medicine
- Numerous experiments available
- Detailed and student-friendly experiment guides

Experiments on the topic of “nerve cells” can be carried out with the basic equipment. Other topics are possible: interaction between nerve cells, sensory cells and motor cells as well as neuronal networks. For this, the basic equipment is simply supplemented with one to three additional nerve cells (“neurosimulators”). Additional accessories are not required.

Extract from the experiment list:

The nerve cell
- Action potential and excitation conduction
- Membrane potential and time constant
- Functions of the synapses
- Spatial and temporal summation

Nerve cell interactions
- Cellular processes of learning
- Conditional reflex
- Renshaw inhibition
- Lateral inhibition

Neural networks
- Transient responses
- Neural oscillator (internal clock)
- Rotating excitation (short-term memory)
- Sensory learning (cerebral cortex)
- Self-calibration of paired sensory channels

Products	Item no.
Basic Set Neurobiology Nerve cell unit (Neurosimulator), nerve cell operating device with 4 stimulus channels and for power supply, measureAPP software, 2 Cobra SMARTsense voltage sensors, oscilloscope, various connecting cables.	
Set Neurobiology	65963-22
Neurosimulator Nerve cell unit, various connecting cables	
Neurosimulator	65963-00
Alternatively, you can also order the following experiments:	
The nerve cell with Cobra SMARTsense (including 1 nerve cell)	P4010769
Nerve cells interactions with Cobra SMARTsense (including 2 nerve cells)	P4010869
Neural networks with Cobra SMARTsense (including 3 nerve cells)	P4010969

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