



## ***Electrophysiological In vitro Models of Ischemia: Acutely Isolated Slices and Slice Cultures***

### **Scope of application**

- Evaluation of neuroprotective compounds
- Oxygen glucose deprivation (OGD)
- Neurotoxicity testing
- Safety pharmacology (detection of side effects of putative therapeutics)

### **Models**

#### ***Electrophysiological recordings***

Population spikes (PS) are evoked by stimulation of the Schaffer collaterals in of area CA1 in freshly isolated hippocampal slices from adult rats/mices or organotypic hippocampal slice cultures in an interface type recording chamber. Restitution of the PS amplitude after hypoxia/hypoglycemia is taken as functional parameter for neuronal damage.

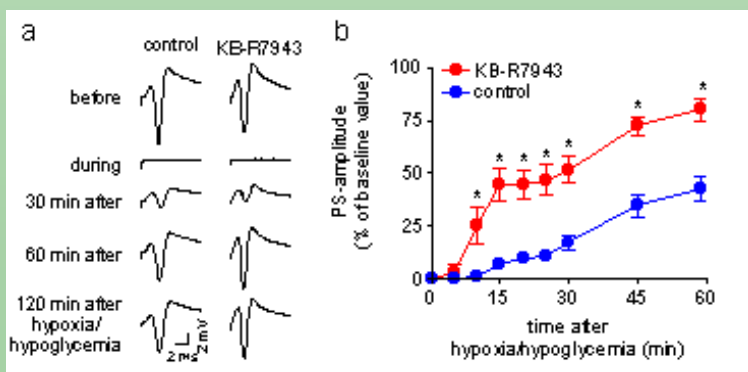
#### ***Acutely isolated slices***

Are used for short-term physiology (several hours) and can be obtained from young and adult animals.

#### ***Organotypic slice cultures***

Long-term recording for up to a few days from tissue cultures obtained from 9-12 day old rats.

Multi-electrode recordings (MEA)



The Na<sup>+</sup>/Ca<sup>2+</sup> exchange inhibitor KB-R7943 (100 nM) protects hippocampal slices from adult rats from hypoxic/hypoglycemic injury: a) sample population spikes; b) summarised results.