

Glia and the regulation of extracellular potassium concentration in the CNS

Through this mechanism, glia participate in information transmission in the CNS and ion balance:

- during action potential, potassium enters the extracellular space,
- an increase in extracellular potassium leads to long-lasting depolarization of neurons (suppresses nerve activity).

Removal of increased concentration of potassium (extracellular):

- diffusion,
- influx of potassium into glial cells,
- active transport of potassium into the neuron.

Other mechanisms of potassium homeostasis:

- transmembrane Na^+ cycle,
- transfer of KCl (absorption),
- $\text{Ca}^{2+}/\text{K}^+$ interactive system.

The movement of potassium into glia is referred to as spatial buffering. Glia are connected by gap junctions (ion movement is not restricted)

Links

Related Articles

- Action potential (physiology)
- Membrane potential and its changes

Source

- MYSLIVEČEK, Jaromír. *Základy neurovědy*. 2. vydání. Praha : Triton, 2009. ISBN 978-80-7387-088-1.