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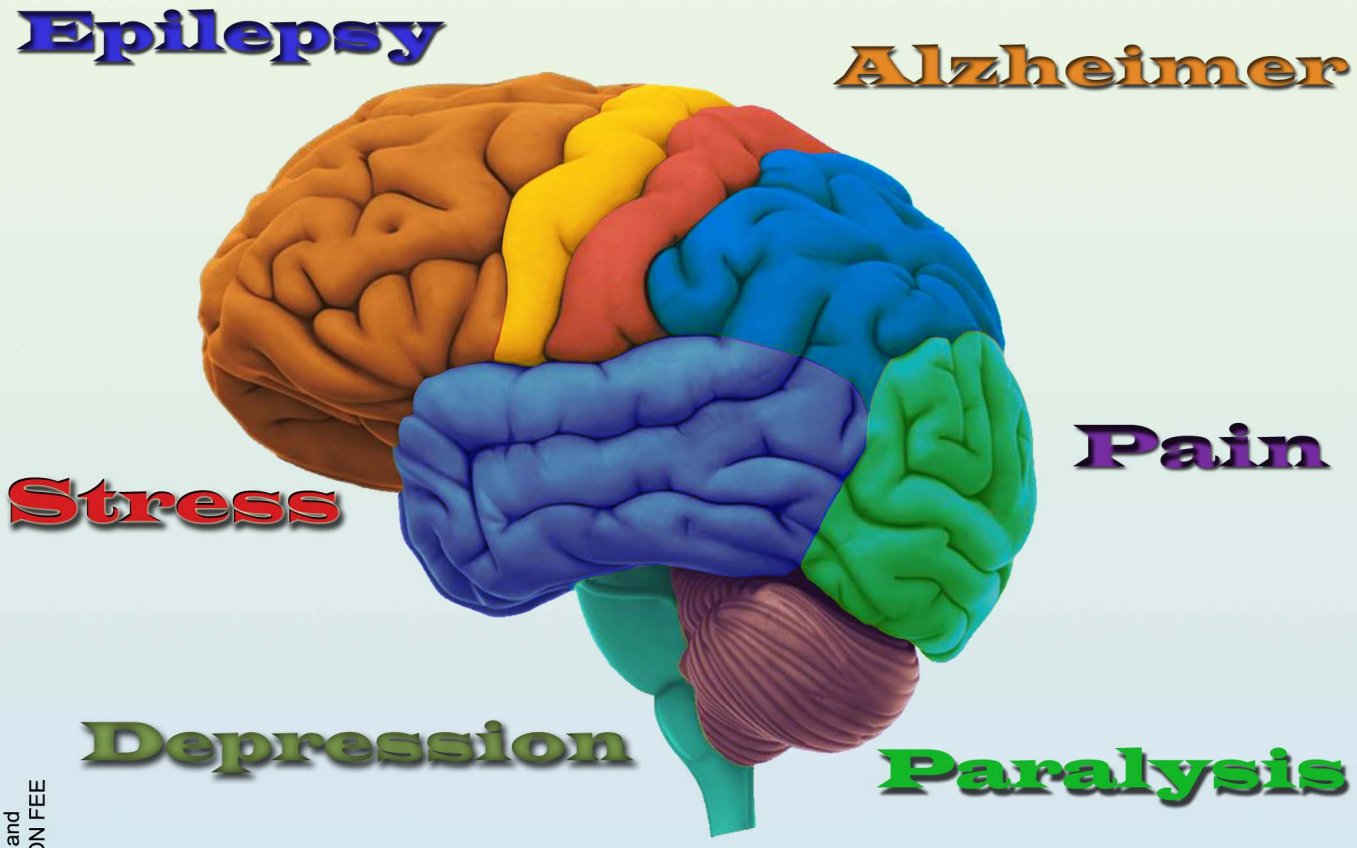

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AIM AND SCOPES
Journal of Cellular Neuroscience and Oxidative Stress is an online journal that publishes original research articles, reviews and short reviews on the molecular basis of biophysical, physiological and pharmacological processes that regulate cellular function, and the control or alteration of these processes by the action of receptors, neurotransmitters, second messengers, cation, anions, drugs or disease.

Areas of particular interest are four topics. They are;

A- Ion Channels (Na^+- K^+ Channels, Cl^- channels, Ca^{2+} channels, ADP-Ribose and metabolism of NAD^+, Patch-Clamp applications)

B- Oxidative Stress (Antioxidant vitamins, antioxidant enzymes, metabolism of nitric oxide, oxidative stress, biophysics, biochemistry and physiology of free oxygen radicals)

C- Interaction Between Oxidative Stress and Ion Channels in Neuroscience
(Effects of the oxidative stress on the activation of the voltage sensitive cation channels, effect of ADP-Ribose and NAD^+ on activation of the cation channels which are sensitive to voltage, effect of the oxidative stress on activation of the TRP channels in neurodegenerative diseases such Parkinson's and Alzheimer's diseases)

D- Gene and Oxidative Stress
(Gene abnormalities. Interaction between gene and free radicals. Gene anomalies and iron. Role of radiation and cancer on gene polymorphism)

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Keywords
Ion channels, cell biochemistry, biophysics, calcium signaling, cellular function, cellular physiology, metabolism, apoptosis, lipid peroxidation, nitric oxide, ageing, antioxidants, neuropathy, traumatic brain injury, pain, spinal cord injury, Alzheimer's Disease, Parkinson's Disease.

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Cerebral ischemia models in rats

Zeki Serdar ATAİZİ
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Stroke is the second cause of death worldwide. Stroke induces cerebral ischemia. The cerebral ischemia is a neurodegenerative disease that causes disability and mortality. An accumulating body of evidence indicates that abnormalities of Ca^{2+} homeostasis are caused by excessive levels of free oxygen radicals in rats with cerebral ischemia. Occlusion of middle cerebral artery in human induces cerebral ischemic stroke. In experimental animals, best model of induction of cerebral ischemic stroke is occlusion of middle cerebral artery for 30 min (Canazza et al. 2014). In cerebral ischemia stoke model, right or left middle cerebral artery is exposed through a ventral midline incision in the neck and it is loosely encircled with sutures for further occlusion. Following a midline incision, the skull is craniectomized to expose the right or left common carotid artery. A 3-0 suture is positioned so that it encircled the middle cerebral artery for further occlusion. Cerebral ischemic surgery is performed through occlusion of the right or left middle cerebral artery for 30 min (Akpınar et al. 2016). In addition to the best model, there are also other models of cerebral stroke in rodents such as the intra-luminal suture, thromboembolic, the coagulation or ligation, the endothelin-1, and the distal artery compression models (Canazza et al. 2014).

In the presentation, a selection of the principal models is described and the model was compared with the other models.

Key words: Cerebral ischemia stroke model; Cerebral artery; Rats; Calcium ion.

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