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# 3<sup>rd</sup> International Brain Research School

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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<sup>+</sup>- K<sup>+</sup> Channels, Cl<sup>-</sup> channels, Ca<sup>2+</sup> channels, ADP-Ribose and metabolism of NAD<sup>+</sup>, 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<sup>+</sup> 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)

#### **READERSHIP**

Biophysics	Biochemistry
Biology	Biomedical Engineering
Pharmacology	Physiology Genetics
Cardiology	Neurology
Oncology	Psychiatry
Neuroscience	Neuropharmacology

#### **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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# Abstract Book

of

3<sup>rd</sup> International Brain  
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25 June – 1 July 2018

Isparta, Turkey

with collaboration of  
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 **Oral Presentation 5**
**Depression models in experimental animals****Arif DEMİRDAŞ**

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Depression is a mental disorder that is estimated by the World Health Organization to affect 350 million people worldwide. But its pathogenesis and underlying mechanisms have not been understood yet. To present a satisfying explanation for the causes and treatments of these sorts of diseases animal models can be a powerful model for the researchers.

Experimental animal research has been frequently used, in related with clinical studies, to test a number of hypotheses regarding the etiology of depression and its related behaviors. In the literature, experimental animal models about depression were described. These are chronic mild stress, forced swimming test, learned helplessness, tail suspension test, psycho-stimulant drug withdrawal and olfactory bulbectomy. In the oral presentation, it was summarized the experimental animal models that are used most commonly for depression, and discussed their advantages and limitations.

In conclusion, it seems that some experimental animal models such as chronic mild stress and forced swimming test in several experiments have been using for investigating depression etiology and treatment and the models are very useful for searching the disease.

**Keywords:** Animal models; Depression; Chronic mild stress; Forced swimming test.

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