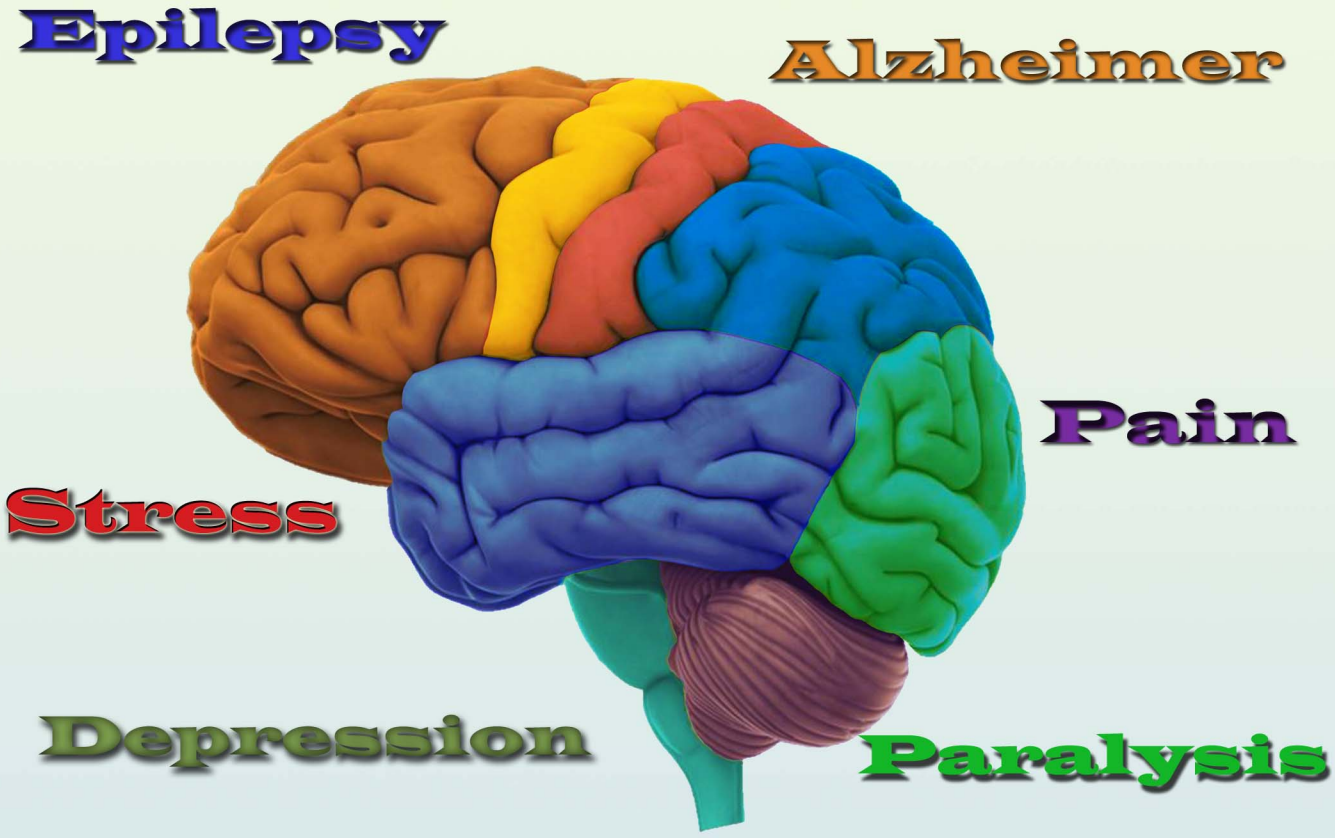
E-ISSN: 2149-7222 (Online)

Journal Cellular Neuroscience and Oxidative Stress

http://dergipark.gov.tr/jcnos

Former name; Cell Membranes and Free Radical Research



Brain Research School

OPEN ACCESS and NO PUBLICATION FEE

Supp 1 Volume, 2019

4th International Brain Research School

24-30 June 2019 Isparta /TURKEY

2019.brs.org.tr

Journal of Cellular Neuroscience and Oxidative Stress

http://dergipark.gov.tr/jcnos

BSN Health Analyses, Innovation, Consultancy, Organization, Industry and Trade Limited Company

http://www.bsnsaglik.com.tr/

info@bsnsaglik.com.tr

Formerly known as:

Cell Membranes and Free Radical Research (2008 - 2014)

Supp 1 Volume, 2019

Supp 1 Volume, 2019
E-ISSN Number: 2149-7222 (Online)
Indexing: Google Scholar, Index Copernicus, Chemical Abstracts, Scopus (Elsevier),
EBSCOhost Research Database, Citation Index Database,

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)

READERSHIP

Biophysics	Biochemistry
Biology	Biomedical Engineering
Pharmacology	PhysiologyGenetics
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.

4th International Brain Research School

Abstract Book

of

4th International Brain Research School

24-30 June 2019

Isparta, Turkey

with collaboration of

BSN Health Analyses, Innovation, Consultancy, Organization, Industry and Trade Limited Company

& Neuroscience Research Center, Süleyman Demirel University

4th International Brain Research School

_____ [Organization Committee] _____

Organization Chairman
Prof. Dr. Mustafa NAZIROĞLU
Department of Biophysics, School of Medicine
Suleyman Demirel University, Isparta, Turkey

Organization Vice Chairman
Assoc. Prof. Dr. Ömer ÇELİK
Department of Biophysics, School of Medicine
Suleyman Demirel University, Isparta, Turkey

Organization Secretariat
Dr. Bilal ÇİĞ
Ahmi ÖZ & Ramazan ÇINAR
Department of Biophysics, School of Medicine
Suleyman Demirel University, Isparta, Turkey

Accountant
Kenan YILDIZHAN &
Yener YAZĞAN *(Graphic Designer & Webmaster)*
Department of Biophysics, School of Medicine
Suleyman Demirel University, Isparta, Turkey

4th International Brain Research School

_____ [Scientific Committee] _____

4th International Brain Research School

_____ [Scientific Committee] _____

4th International Brain Research School

Oral Presentations

Oral Presentations

Oral Presentation 4

Interactions between chemotherapy-induced neuropathic pain and TRPV1 channel

Haci Ömer OSMANLIOĞLU
Department of Anesthesiology and Reanimation, Faculty of Medicine, Suleyman Demirel University, Isparta, Turkey.

As a complex problem, pain activates several conditions, symptoms, and molecular pathways. After stimulation of a nociceptors, action potentials are generated and then propagated to the brain, resulting in a sensation of pain is induces through production and propagation of action potential. Most efficient way to treat chronic pain is with opioids, however the drugs of opioid system induce several adverse effects such as addictive behavior and desensitization. Chemotherapeutic agent (such as oxaliplatin, cisplatin, paclitaxel)-based anticancer drugs cause neurotoxicity through excessive calcium ion (Ca^{2+}) influx. Peripheral neuropathies are a common side effect of treatment of various chemotherapeutics. Today, targeting the cation channels and excessive Ca^{2+} influx that contribute to the detection of stimuli may be an effective approach in treating chemotherapeutic agents-induced pain syndromes. Several physiological and pathophysiological functions are induced by excessive Ca^{2+} influx. The Ca^{2+} passes the cell membrane through several channels such as voltage gated calcium channels (VGCC) and chemical (ligand) channels. In addition to the well-known VGCC and ligand channel, new channels namely transient receptor potential (TRP) channels were discovered within last decades. The TRP superfamily is including 28 members in mammalian and a member of the TRP superfamily is TRP vanilloid 1 (TRPV1) channels. The TRPV1 channel is activated by several stimuli including hot chili pepper component (capsaicin), heat, acidic pH and oxidative stress (Caterina et al. 1997). Expression levels of TRPV1 channel is high in dorsal root ganglion (DRG) and it is mainly responsible from neuropathic pain (Nazıroğlu and Braidy, 2017; Muller et al. 2019). Therefore, TRPV1 channel has great importance in the chemotherapy-induced neuropathic pain induction. In the current study, I will summarize present reports on the TRPV1 channel in literature. as novel target for treating chemotherapy-induced peripheral pain. In addition, I will summarize future directions of the novel targets.

Keywords: Chemotherapeutics; Neuropathic pain; Calcium ion; Oxidative stress.

References

Caterina MJ, Schumacher MA, Tominaga M, Rosen TA, Levine JD, Julius D. 1997. The capsaicin receptor: a heat-activated ion channel in the pain pathway. Nature. 389(6653):816-24.

Nazıroğlu M, Braidy N. 2017. Thermo-sensitive TRP channels: Novel targets for treating chemotherapy-induced peripheral pain. Front Physiol. 8:1040.

Muller C, Morales P, Reggio PH. 2019. Cannabinoid ligands targeting TRP channels. Front Mol Neurosci. 11:487.