

Accepted Manuscript

Title: Effects of electromagnetic fields exposure on the antioxidant defense system

Authors: Elfide Gizem Kıvrak, Kıymet Kübra Yurt, Arife Ahsen Kaplan, Işınsu Alkan, Gamze Altun



PII: S2213-879X(17)30073-1
DOI: <http://dx.doi.org/doi:10.1016/j.jmau.2017.07.003>
Reference: JMAU 141

To appear in:

Received date: 16-5-2017
Revised date: 19-7-2017
Accepted date: 26-7-2017

Please cite this article as: Elfide Gizem Kıvrak, Kıymet Kübra Yurt, Arife Ahsen Kaplan, Işınsu Alkan, Gamze Altun, Effects of electromagnetic fields exposure on the antioxidant defense system (2010), <http://dx.doi.org/10.1016/j.jmau.2017.07.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Review**Journal of Microscopy and Ultrastructure****Effects of electromagnetic fields exposure on the antioxidant defense system**

Elfide Gizem Kıvrak, Kıymet Kübra Yurt, Arife Ahsen Kaplan, Işınsu Alkan, Gamze Altun,

*Department of Histology and Embryology, Faculty of Medicine, Ondokuz Mayıs University,
Samsun, Turkey*

Corresponding author:

Elfide Gizem Kıvrak

Department of Histology and Embryology

Faculty of Medicine

Ondokuz Mayıs University, 55139

Samsun, Turkey

E-mail: elfide.gzm@gmail.com

Abstract

Technological devices have become essential components of daily life. However, their deleterious effects on the body, particularly on the nervous system, are well known. Electromagnetic fields (EMF) have various chemical effects, including causing deterioration in large molecules in cells and imbalance in ionic equilibrium. Despite being essential for life, oxygen molecules can lead to the generation of hazardous by-products, known as reactive oxygen species (ROS), during biological reactions. These reactive oxygen species can damage cellular components such as proteins, lipids and DNA. Antioxidant defense systems exist in order to keep free radical formation under control and to prevent their harmful effects on the biological system. Free radical formation can take place in various ways, including ultraviolet light, drugs, lipid oxidation, immunological reactions, radiation, stress, smoking, alcohol and biochemical redox reactions. Oxidative stress occurs if the antioxidant defense system is unable to prevent the harmful effects of free radicals. Several studies have reported that exposure to EMF results in oxidative stress in many tissues of the body. Exposure to EMF is

Download English Version:

<https://daneshyari.com/en/article/7696055>

Download Persian Version:

<https://daneshyari.com/article/7696055>

[Daneshyari.com](https://daneshyari.com)