

# Iranian Journal of Toxicology

Scientific Quarterly Journal

Volume 13, Number 1, February 2019

**Chairman:** Dr. Mohammad Jamalian

**Editor-in-Chief:** Dr. Hassan Solhi

**Editor of the section of Analytic Toxicology:** Kambiz Soltaninejad

**Editor of the section of Biochemical Toxicology:** Mohammad Abdollahi

**Editor of the section of Cellular Toxicology:** Seyed Nasser Ostad

**Editor of the section of Clinical Toxicology:** Shahin Shadnia

**Editor of the section of Molecular Toxicology:** Jalal Pourahmad, Omid Sabzevari

**Associated Editor:** Ali Cyrus: MD, Department of Urology, Arak University of Medical Sciences, Arak, Iran.

**Associated Editor:** Amir Mohammad Kazemifar: MD, Department of Forensic Medicine, Ghazvin University of Medical Sciences, Ghazvin, Iran.

**Associated Editor:** Kamran Tavakol: Professor Emeritus, School of Medicine, University of Maryland, Baltimore, MD, USA.

## Editorial Board:

**Mohammad Abdollahi** (Pharm.D, Department of Toxicology & Pharmacology, Tehran University of Medical Sciences, Tehran, Iran).

**Mahdi Balali-Mood** (PhD, Department of Toxicology, Mashhad University of Medical Sciences, Mashhad, Iran).

**Mahmoud Ghazi-Khansari** (Pharm.D, Department of Toxicology & Pharmacology, Tehran University of Medical Sciences, Tehran, Iran).

**Farzad Gheshlaghi** (MD, Department of Poisoning Emergency, Isfahan University of Medical Sciences, Isfahan, Iran).

**Hossein Hassanian-Moghadam** (MD, Department of Clinical Toxicology, Shahid Beheshti University of Medical Sciences, Tehran, Iran).

**Mahmoud Reza Heydari** (Pharm.D, Department of Toxicology & Pharmacology, Kerman University of Medical Sciences, Kerman, Iran).

**Farshad Hosseini-Shirazi** (Pharm.D, Department of Toxicology & Pharmacology, Shahid Beheshti University of Medical Sciences, Tehran, Iran).

**Omid Mehrpour** (MD, Department of Forensic Medicine, Birjand University of Medical Sciences, Birjand, Iran).

**Ali Akbar Moghadamnia** (Pharm.D, Department of Pharmacology, Babol University of Medical Sciences, Babol, Iran).

**Hossein Niknahad** (Department of Pharmacology and Toxicology, Shiraz University of Medical Sciences, Shiraz, Iran).

**Lucky Lebgbosi Nwidi** (PhD in Pharmacology, Department of Pharmacology & Toxicology, Bayelsa, Nigeria).

**Seyed Nasser Ostad** (Pharm.D, Department of Toxicology, Tehran University of Medical Sciences, Tehran, Iran).

**Shirin Pazuki** (MD, Department of Anesthesiology, Arak University of Medical Sciences, Arak, Iran).

**Jalal Pourahmad** (Pharm.D, Department of Toxicology & Pharmacology, Shahid Beheshti University of Medical Sciences, Tehran, Iran).

**Hamid Reza Rasekh** (Pharm.D, Department of Toxicology & Pharmacology, Shahid Beheshti University of Medical Sciences, Tehran, Iran).

**Omid Sabzevari** (Pharm.D, Department of Toxicology, Tehran University of Medical Sciences, Tehran, Iran).

**Palanivel Sathishkumar** (Researcher Institute of Environmental and Water Resource Management University Technology Malaysia Johor Bahru, Malaysia).

**Shahin Shadnia** (MD, Department of Internal Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran).

**Hassan Solhi** (MD, Department of Forensic Medicine, Arak University of Medical Sciences, Arak, Iran).

**Kambiz Soltaninejad** (Pharm.D, Department of Toxicology & Pharmacology, Legal Medicine Organization, Tehran, Iran).

**Haleh Talaie** (MD, Department of Toxicology, Shahid Beheshti University of Medical Sciences, Tehran, Iran).

**Musa Toyin Yakubu** (PhD, Biochemistry, Department of Biochemistry, University of Ilorin, Ilorin, Nigeria).

**Faezeh Ghasemi** (Department of Biotechnology, Faculty of Medicine, Arak University of Medical Sciences, Arak, Iran).

**Amir Mohammad Kazemifar** (Department of Forensic Medicine, Ghazvin University of Medical Sciences, Ghazvin, Iran).

**Hossein Sanaei-Zadeh** (Department of Forensic Medicine and Clinical Toxicology, Shiraz University of Medical Sciences, Shiraz, Iran).

**Mohammad Delirrad** (Department of Forensic Medicine, Medical Faculty, Urmia University of Medical Sciences, Urmia, Iran).

**Executive Manager:** Dr. Seyed Mohsen Tabatabaei

**Executive Expert:** Sima Hamidi

**Publisher:** Arak University of Medical Sciences with corporation of Iranian Society of Toxicology

**Journal Office:** Arak University of Medical Sciences, Basij Sq., Arak, Iran. **Telefax:** +98 86 34173509

**E-mail:** "ijt@arakmu.ac.ir" , tox.journal@ymail.com , tox.journal@gmail.com"

**Homepage:** "http://ijt.arakmu.ac.ir"