

MEET THE EDITOR

Meet our Editorial Board Member: Dr. Andreas Tsakalof



Andreas Tsakalof

Laboratory of Biochemistry, Faculty of Medicine, University of Thessaly, Larisa, Greece.

Correspondence: Laboratory of Biochemistry, Faculty of Medicine, University of Thessaly, Larisa, Greece. Phone: +30 2410 685580; Mobile: +30 6977 624509; Fax: +30 2410 685545. Email: atsakal@med.uth.gr

Dr. Andreas Tsakalof is Associate Professor of Medicinal Chemistry at the Faculty of Medicine, University of Thessaly, Greece. He graduated from Moscow State University of Fine Chemical Technologies named after M.V. Lomonosov in 1977 and earned his Ph.D in chemistry from Russian Academy of Science, Nesmeyanov Institute of Organoelement Compounds in 1986. In 1998 he was awarded Mary Curie individual fellowship as experienced researcher and received funded position at the University of Surrey, UK for the period 1998-1999. During this period he was trained in molecular toxicology and simultaneously attended lectures in MSc Program in Toxicology of the Surrey University. Dr. Andreas Tsakalof is European Registered Toxicologist and Vice-President of the Hellenic Society of Toxicology.

Dr. Andreas Tsakalof is the author of 57 research publications in peer reviewed journals and his publications received more than 1300 citation and h-factor of 21 (Scopus data on 09-2018, Author ID: 6602277700). He is also the author of three patents and two book chapters.

He is the member of editorial board of three journals and reviewer at more than 14 journals. He was awarded in 2011 as Top reviewer from the journal Toxicology Letters (IF = 3.2, 2018) for the exceptional contribution to quality of Toxicology Letters and in 2015 Award for Outstanding Contribution in Reviewing for Food and Chemical Toxicology (IF=3.8, 2018).

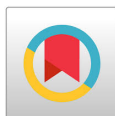
Dr. Andreas Tsakalof was the member of organizing and/or scientific committees of 14 International and Panhellenic congresses.

Professor Tsakalof research activities and interests are now focused on:

- Application of chromatography and chromatography-mass spectrometry in clinical chemistry, toxicology and human biomonitoring.
- Vitamin D in human health and disease.
- GC-MS analysis of VOC in exhaled air for clinical diagnosis.
- Fabrication of molecularly imprinted polymers and their application for the identification and isolation of bioactive molecules.

He is the leader and scientific supervisor of the research groups involved in these research activities.

Several innovative approaches and achievements of his group in the field of applied bioanalysis can be mentioned. In particular the development of GC-IT-MS/MS method for monitoring of 17-estradiol and 2-methoxyestradiol in plasma, analysis



Citation: Tsakalof A. Meet our Editorial Board Member: Dr. Andreas Tsakalof. J Appl Bioanal 4(4), 102-104 (2018).

Funding & Manuscript writing assistance: The author has no financial support or funding to report and she also declare that no writing assistance was utilized in the production of this article.

Competing interests: The author has declared that no competing interest exist.

essential for early diagnosis of pre-eclampsia, a systemic disorder of pregnancy remaining a leading cause of maternal and fetal morbidity and mortality worldwide. Low limits of detection were achieved by large volume injection (10 μ L) using a packed Programmable Temperature Vaporization (PTV) injector. The sensitivity of the method was further increased by increasing dumping gas flow in Ion Trap from the default of 0.3 mL min⁻¹ to 2 mL min⁻¹ and thus increasing the trapping efficiency and as a result substantial increase in the instrument response (peak area) and the S/N ratio [11].

Another interesting application was the development of on-line SPE-UHPLC method for the 25-hydroxy-vitamin D quantification in serum/plasma for the determination of vitamin D status. The instrument configuration and SPE column packing material selected enable large volume sample injection (500 μ L) and online sample tenfold pre-concentration, clean up and subsequent selective metabolites transfer onto the analytical column. The method abrogates off-line sample preparation steps and substantially simplify and speed up the analysis [7].

The development of innovative application of molecular imprinting for ligand based "real" screening for bioactive molecules for the regulation of the selected biological targets can be also mentioned. The new strategy consists of imprinting known natural ligands of selected targets (enzymes, receptors) and thus the synthetic reproduction of the target binding site in the molecularly imprinted polymer (MIP). Subsequently, the MIP can be used for specific recognition and isolation of structurally similar molecules from different sources, e.g. plant crude extracts, by MIP-Solid Phase Extraction procedure [1,5,6].

Selected Publications

1. Barkaline VV, Douhaya YV, Tsakalof A. Computer simulation based selection of optimal monomer for imprinting of tri-O-acetyladenosine in polymer matrix: Vacuum calculations. *J Mol Model* 19(1), 359-369 (2013).
2. Koureas M, Karagkouni F, Rakitskii V, Hadjichristodoulou C, Tsatsakis A, Tsakalof A. Serum levels of organochlorine pesticides in the general population of thessaly, greece, determined by HS-SPME GC-MS method. *Environ Res* 148, 318-321 (2016).
3. Koureas M, Tsakalof A, Tsatsakis A, Hadjichristodoulou C. Systematic review of biomonitoring studies to determine the association between exposure to organophosphorus and pyrethroid insecticides and human health outcomes. *Toxicol Lett* 210(2), 155-168 (2012).
4. Koureas M, Tsakalof A, Tzatzarakis M, Vakonaki E, Tsatsakis A, Hadjichristodoulou C. Biomonitoring of organophosphate exposure of pesticide sprayers and comparison of exposure levels with other population groups in thessaly (greece). *Int J Occup Environ Med* 71(2), 126-133 (2014).
5. Lakka A, Mylonis I, Bonanou S, Simos G, Tsakalof A. Isolation of hypoxia-inducible factor 1 (HIF-1) inhibitors from frankincense using a molecularly imprinted polymer. *Invest New Drugs* 29(5), 1081-1089 (2011).
6. Lakka A, Tsakalof A. (2013). Molecular imprinting of tri-o-acetyladenosine for the synthetic imitation of an ATP-binding cleft in protein kinases. *ChemPlusChem* 78(8), (2013).
7. Paliogiannis D, Bekou E, Pazaitou-Panayiotou K, Samanidou V, Tsakalof A. On-line SPE sample treatment as a tool for method automatization and detection limits reduction: Quantification of 25-hydroxyvitamin D3/D2. *J Chromatogr B Analyt Technol Biomed Life Sci* 1043, 219-227 (2017).
8. Triantafyllou A, Mylonis I, Simos G, Bonanou S, Tsakalof A. Flavonoids induce HIF-1 but impair its nuclear accumulation and activity. *Free Radic Biol Med* 44(4), 657-670 (2008).
9. Tsakalof A, Bairachtari K, Georganakis M. (2003). Development of a liquid chromatography-mass spectrometry method for monitoring the angiotensin-converting en-

- zyme inhibitor lisinopril in serum. *J Chromatogr B Analyt Technol Biomed Life Sci* 783(2), 425-432 (2003).
10. Tsakalof AK, Bairachtari KA, Chryssoulakis ID. Pitfalls in drying oils identification in art objects by gas chromatography. *J Sep Sci* 29(11), 1642-1646 (2006).
 11. Tsakalof AK, Gkagtzis DC, Koukoulis GN, Hadjichristodoulou CS. Development of GC-MS/MS method with programmable temperature vaporization large volume injection for monitoring of 17-estradiol and 2-methoxyestradiol in plasma. *Anal Chim Acta* 709, 73-80 (2012).