



Inorganic Chemistry - CGA RESEARCH GROUP 2021

MEMBERS:

- Assoc. Prof. Augustin Curticăpean, PhD - group responsible
- Senior Lecturer Lavinia Berța, PhD
- Senior Lecturer Boda Francisc, PhD
- Technician Elena Măcicășan

STUDENTS CURRENTLY INVOLVED:

1. Cozac Ruxandra (Master CMAM an I)
2. Papuc Bianca (Master CMD, an II)
3. Craciun Dalia (Master CMD, an II)
4. Racoți Andreea (Farmacie, an V)
5. Peterfi Orsolya (Farmacie, an IV)

THEMES:

- Synthesis and characterization of Inorganic Coordination Compounds - Polyoxometalates
- Environmental Protection Applications of New Coordination Compounds
- HPLC Methods Development for Food Safety
- Elemental Analysis by Inductively Coupled Plasma ICP-OES
- Snake Venoms Analysis and Their Biological Activity Studies

RESEARCH EQUIPMENT AND INSTRUMENTS

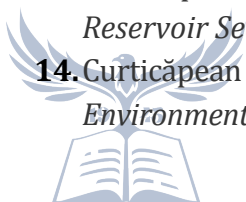
- Analytical Balance Kern AS 105
- Multiparameter INOLAB 740
- Ultrasonic Bath T700H Elma Transsonic
- Water Purification System Barnstead NanoPure
- UV-Vis Spectrophotometer Analytik Jena SPECORD 210
- Thermogravimeter TGA/DSC Mettler Toledo
- FT-IR Spectrophotometer Thermo Nicolet 380
- Capillary Electrophoresis System Agilent CE 6100 DAD
- ICP-OES Spectrometer Thermo ICAP6300
- Modular Liquid Chromatography System DIONEX Ultimate 3000
- Modular Ion Chromatography System DIONEX IC3000





ISI ARTICLES OF THE RESEARCH TEAM (as main authors: first author, corresponding author and last author; *students):

1. Effect of Bitis gabonica and Dendroaspis angusticeps snake venoms on apoptosis-related genes in human thymic epithelial cells. Boda F, Banfai K, Garai K, Kovacs B, Almasi A, Scheffer D, Lambertne Sinkler R, Csonka R, Czompoly T, Kvell K. *Journal of Venomous Animals and Toxins including Tropical Diseases*, 26e20200057. IF(2019): 2,262. DOI: 10.1590/1678-9199-JVATITD-2020-0057.
2. Imre Silvia, Tero-Vescan Amelia, Dogaru Titica Maria, Kelemen Laszlo, Muntean Daniela, Curticapean Augustin, Szegedi N, Vari Camil, *With or Without Internal Standard in HPLC Analysis. A Case Study*, *J.Chrom.Science* 2019, 57(3), 243, doi.org/10.1093/chromsci/bmy106, IF=1.037;
3. Boda FA, Mare A, Szabó ZI, Berța L, Curticăpean A, Dogaru M, Man A, *Antibacterial activity of selected snake venoms on pathogenic bacterial strains*, *Rev. Română Medicină Laborator* 2019, 27,305-317 doi.org/10.2478/rrlm-2019-0015, IF=0.800;
4. Péterfi O, Boda F, Szabó Z, Ferencz E, Bába L, *Hypotensive snake venom components – A mini-review*, *Molecules* 2019, 24,2778, doi.org/10.3390/molecules24152778, IF=3.06;
5. Boda F, Banfai K, Garai K, Curticapean A, Berta L, Sipos E, Kvell K, *Effect of Vipera Ammodytes Ammodytes Snake Venom on the Human Cytokine Network*, *Toxins* 2018, 10(7), 259, doi.org/10.3390/toxins10070259, IF=3.273;
6. Boda FA, Salamon P, Orban C, Berta L, Curticapean A, Gaz SA, Dogaru M, *Heterologous Expression and Purification of Crotoxin B, the Phospholipase A2 Subunit of Crotoxin*, *Studia Univ.Babes-Bolyai, Chemia*, 2018, 63(1), 7-20, DOI: 10.24193/subbchem.2018.1.01, IF=0.305;
7. Lavinia Berța (Grama), Francisc Boda, Gheorghe Borodi, Aura Rusu, Hajnal Kelemen, Adrian Man, Anca Mare, Șerban-Andrei Gâz-Florea. *Two New Sandwich-Type Compounds Based On {Asw₉} With Pd²⁺ And Pt⁴⁺ Cations – Synthesis, Characterization And Antibacterial Activity*. *Farmacia* 2017,65(1):63-68, IF=1,348;
8. Man A., Mare A., Toma F., Curticăpean A., Santacroce L., *Health Threats from Contamination of Spices Commercialized in Romania: Risks of Fungal and Bacterial Infections*, *Endoc.Metbol.Immune Dissorders-DrugTargets*, 2016,16(3), ISSN 1871-5303, DOI: 10.2174/18715303166661608231458 17, IF=1.987;
9. Curticăpean M., Curticăpean A., *Detection of the genetically modified organisms from food products*, *Rev. Română Medicină Laborator* 2014, 22(3),387-395 (DOI: 10.2478/rrlm-2014-0026), IF=0.239;
10. Grama Lavinia, Man A., Muntean Daniela-Lucia, Florea Gâz Ș.A., Boda F., Curticăpean A. *Antibacterial Activity of Some Saturated Polyoxotungstates*. *Revista Română de Medicină de Laborator* 2014, 22(1),111-118 (DOI: 10.2478/rrlm-2014-0007), IF=0.239;
11. Curticăpean A., Curticăpean M., *Validation of New HPLC Method Determination of Aflatoxin M1 in Raw Milk*, *J.Envir.Prot.Ecol.* 2013, 14(2) 503-508, ISSN 1311-5065, IF=0.338;
12. Curticăpean A., Toma F., Tarcea M., Curticăpean M., Sămărghișan V., Pop I.A., Gulea A., *HPLC Method Validation for Simultaneous Determination of Three Mycotoxins from Corn Seeds*, *Croatica Chemica Acta* 2011, 84(3): 413-417, ISSN 0011-1643, DOI: 10.5562/cca1788, IF=0.763;
13. Curticăpean M., Drăgan-Bularda M., Curticăpean A., *The Enzymatic Activity from Tarnita Dam Reservoir Sediment*, *J.Envir.Prot.Ecol.* 2011, 12(4A), 2141-2151, ISSN 1311-5065, IF=0.102;
14. Curticăpean A., *Metal-Oxygen Clusters from Polyoxometalates Class and Their Applications for Environmental Protection*, *J.Envir.Prot.Ecol.* 2011, 12(4A), 2089-2100, ISSN 1311-5065, IF=0.102;

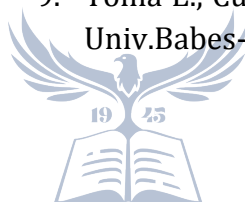




15. Curticăpean A., Muntean D., Curticăpean M., Dogaru M., Vari C., *Optimized HPLC method for tramadol and O-desmethyl tramadol determination in human plasma*, *J.Biochem.BioPhys.Meth.*, 2008, 70(6), 1304-1312, ISSN 0165-022X, DOI:10.1016/j.jprot.2008.01.012, IF=1.994;
16. Curticăpean A., Imre S., *New Validated Method for Piracetam HPLC determination in Human Plasma*, *J.Biochem.BioPhys.Meth.* 2007,69,273-81, ISSN 0165-022X, DOI:10.1016/j.jbbm.2006.06.001, IF=1.338;
17. Imre S., Vari C.E., Dogaru T.M., Curticăpean A., Kelemen, L., Muntean, D., *Metformin Determination in Human Plasma*, *Revista Farmacia*, 2006, LIV (6), 85-93, ISSN 0014-8237, IF=0.144;
18. Toma E., Curticăpean A., Botar A., *Polioxometalati cu activitate biologică*, *Revista de Chimie* 1997, 2, 129-135, ISSN 0034-7752, IF=0.125;
19. Rusu M., Botar A., Curticăpean A., *Polioxometalati cu As(III) și U(IV)*, *Revue Roumain de Chimie* 1996, 41(9-10), 687-93, ISSN 0035-3930, IF=0.219;
20. Curticăpean A., Toma E., Botar, A., *Polioxometalati nesaturati ce contin As(III), Sb(III) și Bi(III)*, *Revista de Chimie* 1996, 12, 1133-6, ISSN 0034-7752, IF=0.125;

BDI ARTICLES OF THE RESEARCH TEAM (as main authors: first author, corresponding author and last author; *students):

1. Todirica D, Santini A, Curticăpean A, Molnar Varlam C, Szekely M, Aldossary M, *Bisphenol A - A Possible Health Issue Arising from Dental Restorative. A Review*, *Dental Oral Biology and CranioFacial Research* 2018, 1(1), 2-12, DOI: 10.31487/j.DOOR.2018.10.007 (ISSN 2613-4950);
2. Rusu A., Popescu G.C., Imre S., Ion V., Vancea S., Grama L.A., Kelemen H., Hancu G., *A New Silver Complex with Ofloxacin - Preliminary Study*, *Acta Medica Marisiensis*, 2016, 62(2), 192-198 (ISSN 2068-3324);
3. Gâz-Florea A.S., Ciurca D., Mare A, Man A., Cordoș B., Grama L.A., Muntean D.L., *New RP-HPLC Method for Separation of Naja haje haje venom and Studies of Its Bactericidal Effect*, *Acta Medica Marisiensis*, 2016, 62(1), 90-94 (ISSN 2068-3324);
4. Arion A. G., Torok I., Nagy F., Imre A., Boda F. A., Stefanut C., Ognean L., *The Comparative Evaluation of the Time to Peak Concentration and the Terminal Half-Life of Two Products Based on Praziquantel in a Bioequivalence Study*, *Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Veterinary Medicine*, 2015,72(1), 197-198 ISSN (1843-5270).
5. Curticăpean A., *Tradition in Competition to Food Safety, or "Archaic Science" against Brand Name Products*, *Acta Medica Marisiensis*, 2014, 60(5):185 (ISSN 2068-3324);
6. Grama Lavinia, Muntean Daniela-Lucia, Curticăpean A. *Unsaturated Heteropolyoxotungstates with Platinum Cation Complexation*. *Acta Medica Marisiensis*, 2014, 60(2):34-36 (ISSN 2068-3324);
7. Grama Lavinia, Boda F., Curticăpean A., Muntean Daniela-Lucia. *The UV and IR Comparative Spectrophotometric Study of Some Saturated and Lacunary Polyoxometalates*. *Acta Medica Marisiensis*, 2014, 60(3):84-88 (ISSN 2068-3324);
8. Curticăpean A., Botar A., Rusu M., *Polioxometalatul criptat $Na_{27}[NaAs_4W_{40}O_{140}]$ ca ligand coordinativ pentru Th(IV)*, *Studia Univ.Babes-Bolyai, Chemia*, 1994, 39(1-2), 90-96, ISSN 1224-7154, Cod CNCIS 520 (Cat. A);
9. Toma E., Curticăpean A., Botar A., Rusu, M., *Noi polioxometalati ce contin Sb(III) și U(IV)*, *Studia Univ.Babes-Bolyai, Chemia*, 1994, 39(1-2), 97-103, ISSN 1224-7154, Cod CNCIS 520 (Cat. A);





B) ABSTRACTS PUBLISHED BY STUDENTS:

Relevant abstracts with student's contribution*:

1. Boda Ferenc-Andras, Nagy Szilard, **Tolokan Hermina***. Determination of elemental impurities from finished pharmaceutical products. *Orvostudományi értesítő* **2017**, 90(1):160 (TDK).
2. Lavinia Berța (Gramă), F. Boda, **A. Cioloca***, Ș.A. Gâz Florea, Anca Mare, A.Man, A.Curticăpean. *Antifungal activity of $Na_8[HAsW_9O_{33}] \cdot 17H_2O$ and $Na_6[(AsW_9O_{33})_2Pt_3] \cdot 46H_2O$, $Na_{12}[(AsW_9O_{33})_2Pd_3] \cdot 24H_2O$ complexes.* Volum de rezumate CNFR **2016** București, UMF "Carol Davila" București; ISSN 2537-2823.

Student's participation at scientific meetings:

1. Mathe Rita - *Silver NanoParticles*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2010;
2. Cucuiet Nicola, Ingrid Bidiga - *Mycotoxins evaluation and quantification from raw corn and wheat samples*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2011;
3. Molnar Ervin, Zecheru Ioana - *Mycotoxins and their effects*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2011;
4. Mathe Rita - *Cosmetic Applications of Silver NanoParticles*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2011;
5. Andrada Bejan - *Vitamin D3*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2012;
6. Elena Fracas - *HPLC Methods Optimization for Enantioseparation using Kiral Selectors*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2012 - **Prize Awarded**;
7. Mathe Rita - *Catalysis of SuperOxide Dismutase*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2012 - **Prize Awarded**;
8. Rudolf Scwerin, Gorbai Adel - *Deoxynivalenol and Fumonisine Contamination of Fodder for Animals*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2013;
9. Valentin Ion - *Developing an optimal SPE extraction method of human hepcidine peptide and quantify it with the help of a LC*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2013, **Prize Awarded**;
10. Berdan Anca - *Mycotoxins. Study of Acute and Chronic Toxicity on Humans and Animals*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2015;
11. Georgiana Mănica - *Fully Automated Electrophoretically Mediated Microanalysis System for CYP1A1 Activity Monitoring*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2016, **Prize Awarded**;
12. Raluca Țîru - *Synthesis of Vanadium Complexes With Free L-a-AminoAcids Ligands Used in Optimization of the Sulfoxidation Reaction*, International Scientific Congress for Students, Young Physicians and Pharmacists Marisiensis 2016, **Prize Awarded**.



Tg. Mureș, 15.03.2021

Conf. dr. Augustin Curticăpean