Student research group on supramolecular chemistry, proteomics, separation and identification of active ingredients and other analytical & organic chemistry and biopharmaceutical issues

Acronym: SCHEPSIA

Permanent members:

Head of the group: Assoc. Prof. Dr. Șerban Andrei Gâz Florea

Members: Technical assistant: Anuța IACOB

Contact:

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Students currently involved in our research group:

- Ștambert Raluca
- Pușcaș Simona
- Sebesi-Kallay Dávid
- Pop-Buia Naomi
- Popa Darius-Andrei
- Broască Georgiana-Cristina
- Apopei Rareș-Alexandru

Research topics:

- Design, synthesis and structural analysis of new organic compounds and/or supramolecular compounds (organic) with possible biological activities, opto-electronic or logic gate properties;
- Ferrocene chemistry;
- Separation and identification of active ingredients from different mixtures (food, plants, cosmetics etc.);
- Separation, identification, structural analysis and characterization of new compounds with possible biological activities from plants;
- Proteomics – snake venom analysis;
- Proteomics – synthesis of new peptides;
- Sinteza și analiza structurală a unor derivați de tiazol cu pitențiale aplicații farmaceutice;
- Interacțiune medicament-aliment din punct de verdere chimic;
- Analiza influenței unor factori asupra metabolismului uman;
- Sinteza unor hibrizi de chinolone cu potențială activitate antitumorală;
- Studii in-silico ai unor derivați heterociclici pentru găsirea de noi compuși cap de serie;
- Studiul unor compuși chimici cu potențial efect de ameliorare a toxicității pe termen lung a monoglutamatului de sodiu;

Research infrastructure (relevant items): HPLC-UV (collaboration within department), LC-MS/MS (collaboration within Faculty), RMN (collaboration with Babeş-Bolyai University), GC-MS (collaboration with Babeş-Bolyai University), SDS-PAGE, bio facilities (for experiments on animals if necessary);

Relevant *in extenso* ISI articles of the research team (as main authors: first author, corresponding author and last author):

IF>1

1) Octavia-Laura Moldovan, Alexandra Sandulea, Ioana-Andreea Lungu, Șerban-Andrei Gâz, Aura Rusu – *Identification of some glutamic acid derivatives with biological potential by computational methods*, Molecules **2023**, 28(10), 1-28, DOI: 10.3390/molecules28104123 IF(2023)=4.6 (Q1);

2) Aura Rusu, Marius Chereches, Cristian Popa, Raluca Botezatu, Ioana-Andreea Lungu, Octavia-Laura Moldovan – *Community pharmacist's perspective regarding patient-centred communication in conjuction with pharmaceutical practice: A cross-sectional review*, Saudi Pharmaceutical Journal, **2022**, 30(9), 1327-1344, DOI: 10.1016/j.jsps.2022.06.014, IF(2022)=4.562 (Q2);

3) Octavia-Laura Moldovan, Ioana-Andreea Lungu, Victoria Biriș, Aura Rusu – *Fluoroquinolones hybrid molecules as promising antibacterial agents in the fight against antibacterial resistance*, Pharmaceutics, **2022**, 14(8), 1-40, DOI: 10.3390/pharmaceutics14081749, IF(2022)=6.525 (Q1);

4) Aura Rusu, Ioana-Andreea Lungu, Octavia-Laura Moldovan, Corneliu Tanase, Gabriel Hancu – *Structural characterization of the millennial antibacterial (fluoro)quinolones-shaping the fifth generation*, Pharmaceutics, **2021**, 13(8), 1-37, DOI: 10.3390/pharmaceutics13081289, IF(2022)=6.525 (Q1);

5) Octavia-Laura Moldovan, Aura Rusu, Corneliu Tanase, Camil Vari – *Glutamate – a multifaceted molecule: Endogenous neurotransmitter, controversial food additive, design compound for anti-cancer drugs. A critical appraisal*, Food and Chemical Toxicology, **2021**, 153, 112290(1-21), DOI: 10.1016/j.fct.2021.112290, IF(2022)=5.572 (Q1);

6) Andrei Șerban Gâz, Francisc Andrei Boda, Rahela Roxana Pop – *Imidazole Derivatives and their Antibacterial Activity – a Mini-Review*, Mini Review in Medicinal Chemistry, **2021**, 21(11), 1380-1392, DOI: 10.2174/1389557520999201209213648, IF(2020)=3.862 (Q2);

7) Nath N.K., Manoj K., Gâz A.Ș., Naumov P. – *Visible-light-induced photodimerization of a photoactive yellow protein (PYP) chromophore model in a single crystal*, Chemistry-A European Journal, **2013**, 19, 8094- 8099, IF(2013)=5.696 (Q1);

8) Circu M., Petran A., Gâz A.Ș., Bogdan E., Terec A., Rat C.I., Varga R.A., Grosu I. – *Synthesis and structure of new crown ethers with 1,4-phenylene and 1,4-naphthylene units*, Journal of Molecular Structure, **2011**, 996, 1-3, 17-23, IF: 1.634 (2011);

9) Gâz, Ș. A.; Condamine, E.; Bogdan, N.; et al. – *Synthesis and stereochemistry of some new spiro and polyspiro-1,3-dithiane derivatives*", Tetrahedron **2008**, 64, 30-31, 7295-7300, IF(2008)=2.897 (Q1);

IF<1

1) "*Antibacterial activity of some saturated polyoxotungstates*", L. Grama, A. Man, D.-L. Muntean, Ș. A. Gâz Florea, F. Boda, A. Curticăpean, *Revista Română de medicină de Laborator*, **2014**, 1, 22, 111-117, IF: 0.239;
2) "*3,9-Diisopropyl-2,4,8,10-tetrathiaspiro[5.5]undecane*", Ș. A. Gâz, I. Dobra, A. Woiczechowski-Pop, R. A. Varga, I. Grosu, *Acta Crystallographica Section E*, **2010**, E66, o2618, IF: 0.413 (2010);

BDI/B+

"*New RP-HPLC method for separation of Naja haje haje venom and studies of its bactericidal effect*", Gâz Florea A.Ș., Ciurca D., Mare A., Man A., Cordoș B., Grama L., Muntean D.-L., *Acta Medica Marisiensis* **2015**, DOI: 10.1515/amma-2015-0113, Indexat Bază de date: EBSCO;

"*Snake venom metalloproteinases*", Gâz Florea A.Ș., Gâz Florea A., Hajnal K., Muntean D.-L., *Acta Medica Marisiensis* **2015**, DOI: 10.1515/amma-2015-0114, Indexat Bază de date: EBSCO;

"*The UV and IR Comparative Spectrophotometric Study of some Saturated and Lacunary Polyoxometalates*" Grama L., Boda F., Gâz Florea A.Ș., Curticăpean A., Muntean D.-L., *Acta Medica Marisiensis* **2013**, *59*, 84-88, Indexat Bază de date: EBSCO;

"*Synthesis and Structural Analysis of Some New Precursors of Macrocyclic Cyclophanes: 1,4-Bis(2-R-5,5- dimethyl-1,3-Dioxan-2-yl)benzene*"**,** N. Bogdan, F. Pop,S. A. Gâz, E. Bogdan, A. Terec, L. David, I. Grosu,

Studia Univ. "Babes-Bolyai", Chemia **2006***, LI (1), 3–12 Indexat Bază de date:* ISI Thomson Reuters, EBSCO, SCOPUS, ProQuest;

"*Synthesis and Structural Analysis of Some New Precursors of Macrocyclic Cyclophanes: 1,4-Bis(2-R-5- R1-1,3-Dioxan-2-yl)benzene Derivatives*", N. Bogdan, F. Pop, E. Bogdan,S. A. Gâz, A. Terec, L. David, I. Grosu, *Studia Univ. "Babes-Bolyai", Chemia* **2006***, LI (1), 13–20, Indexat Bază de date:* ISI Thomson Reuters, EBSCO, SCOPUS, ProQuest;

Student's participation at scientific meetings (http://marisiensis.ro/)

Răzvan Fekete, Octavia-Laura Oancea, Andrei Șerban Gâz "*Synthesis of some Intermediates of a new Photoswitchable Molecule*" *Acta Medica Marisiensis* **2026**, 72, Supllement 3, 534-535;

Ramona Maria Avram, Maria Ursa, Gâz Florea Șerban Andrei, Oancea Octavia-Laura "*Organic Pollutants in Romanian Waters*", *Acta Medica Marisiensis* **2025**, 71, Supllement 4, 407;

Maria Ursa, Ramona Maria Avram, Oancea Octavia-Laura, Gâz Florea Șerban Andrei "*The Importance of Acylation Reactions in Drug Synthesis*", *Acta Medica Marisiensis* **2025**, 71, Supllement 4, 408;

Leah Freundlich, Șerban Andrei Gâz Florea, Octavia Laura Moldovan "*HDAC6 Inhibitors*", *Acta Medica Marisiensis* **2024**, 70, Supllement 3, 131;

Leah Freundlich, Șerban Andrei Gâz Florea "*Synthesis of Piperazine and Hexahidropyrimidine Derivatives as Potential Protein Inhibitors*", *Acta Medica Marisiensis* **2023**, 69, Supllement 3, 150;

Leah Freundlich, Mihai Silviu Burtavel, Șerban Andrei Gâz Florea, Mark Slevin "*Synthesis of a Choline-Like Derivative as a Potential C-Reactive Protein Inhibitor*", *Acta Medica Marisiensis* **2022**, 68, Supllement 3, 143;

Ciobanu Diana, Sarkany Anita, Bojan Andrada, Gâz Florea Șerban Andrei "*UV-VIS spectrometry determination of caffeine from chocolate*", Marisiensis 2015;

Carmen Maria Rusz, Laura Elena Gliga, Ș. A. Gâz Florea "*Identification and quantification of parabens in cosmetic products by RP-HPLC method*", *Acta Medica Marisiensis* **2014**, 60, Supllement 3, 113-114;

Diana Ciurcă, Anca Teodora Berdan, B. Cormoș, Ș. A. Gâz Florea "*Developing an optimal RP-HPLC and gel electrophoresis methods for separation and identification of Naja haje snake venom enzymes*", *Acta Medica Marisiensis* **2014**, 60, Supllement 3, 112;

Nicoleta Pascari, R. Someșan, L. Ognean, Ș. A. Gâz Florea "*Assay of calcium and magnesium from cheese products by complexometry and ICP method*", *Acta Medica Marisiensis* **2014**, 60, Supllement 3, 115;

Niculoiu Iulia M., Avrigeanu V., Gâz Florea Ș. A. " *Supramolecular Drug Carriers*", *Acta Medica Marisiensis* **2014**, 60, Supllement 3, 125;

Paler Ioana, Avrigeanu V., Gâz Florea Ș. A. "*What is not poison? All things are poisons and nothing is without toxicity? Organometallic compounds as possible anticancer drugs*", *Acta Medica Marisiensis* **2014**, 60, Supllement 3, 126-127;

Stăcescu Ștefana, Mircia E., Gâz Florea Ș. A. "*Determination of L-Ascorbic acid by UV-VIS Spectroscopy*", *Acta Medica Marisiensis* **2013**, 59, Supllement 1, 84;

Gâz Florea Ș. A., **Ciurcă Diana, Berdan Anca**, Avrigeanu V "*Venom Metalloproteinase*",. *Acta Medica Marisiensis* **2013**, 59, Supllement 4, 58;