

**Student research group on:
Designing pharmaceutical and cosmetics formulations
Academic year 2022-2023**

Acronym: PHARMCOSMART

• **Permanent members:**

Adriana-Daniela CIURBA, Professor, PhD (**Head Coordinator**)
Nicoleta TODORAN, Associated Professor, PhD (**Coordinator**)
Paula ANTONOAEA, Associated Professor, PhD (**Coordinator**)
RÉDAI Emőke Margit, Lecturer, PhD (**Coordinator**)
Robert-Alexandru VLAD, Assistant lecturer, PhD (**Coordinator**)
Cornelia Titiana COTOI, Assistant lecturer, PhD (**Coordinator**)
DUMITRU Éva, Chemist technician
Laura NAGY, Technician

• **Contact:**

George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Faculty of Pharmacy,
Department of Pharmaceutical Technology and Cosmetology, Gheorghe Marinescu street, 38
Postal code 540142
Phone: +40.265.215551 ext. 372 or 356
Email: adriana.ciurba@umfst.ro

• **Students currently involved:**

• Éva-Vivien Barthá	• Iulia Deliu	• Maria Molnar	• Ioana Maria Precup
• Magdalena Bîrsan	• Beáta Ferencz	• Zsofia Molnar	• Ingrid Rencz
• Maria-Oana Boaru	• Levente Ferencz	• Crina-Laura Nădășan	• Ioana-Andreea Rughiniș
• Andreea-Teodora Bogdan	• Ana-Maria Fraseniu	• Nóra Nagy	• Bianca-Daniela Sarca
• Maria Caraman	• Ana-Maria Gaman	• Renáta Oltyán	• Lucia-Maria Șerba
• Ilie Ciobanu	• Mara-Elena Gherman	• Denisa-Maria Paliștan	• Larisa Șerban
• Adriana-Cristina Costinaș	• Ana-Maria Gurău	• Lorena Pantea	• Alina-Florina Sidor
• Ráhel Csorja	• Maria-Melina Gyenge	• Flavia-Maria-Magdalena Peterlician	• Ioana-Ștefania Stanciu
• Madalina Curca	• Anamaria Horvat	• Cezara Pinte	• Timea-Lepke Szabó
• Rebeca-Alexandra Daisa	• Iulia Ioniță	• Alexandra Popa	• Cristina-Mălina Timiș
• Cristina Dămean	• Boglárka Jakab	• Andreea Popa	• Smaranda Vasile
	• Larisa-Adriana Moldovan		• Elena Viziteu

• **Research topics:**

- Development of new pharmaceutical or cosmetic formulations: tablets (classic/modified release), pellets, hydrophilic gels, microemulsions, transdermal patches.
- Active pharmaceutical ingredient and excipients interactions (DSC, IR analysis)
- Manufacturing techniques and quality control tests presented in illustration form.
- Mathematical and statistical analysis methods applied in studies of pharmaceutical or cosmetic formulation, using some specific software.
- Cosmetic care techniques and alternative treatment methods.

• **Research infrastructure (relevant items):** Eccentric and rotary tablet press, automated dissolution tester, lyophilizer, rheometer/viscometer; DSC (differential scanning calorimeter), pH/conductometer, UV/VIS spectrophotometer, digital microscope, HPLC-UV, LC-MS/MS, GC-FID; Mini Extruder; Skin Analyzer, Cosmetic Combine.

❶ Relevant *in extenso* ISI/BDI articles of the research team (*student):

1. Vlad RA, Antonoaea P, Todoran N, Muntean DL, Redai EM, Silasi OA, ***Tătaru A**, Bîrsan M, Imre S, Ciurba A. *Pharmacotechnical and analytical preformulation studies for cannabidiol orodispersible tablets*. Saudi Pharmaceutical Journal **2021**, 29(9): 1029-1042. IF: 4.562. DOI: <https://doi.org/10.1016/j.jsps.2021.07.012>
2. Réдай EM, ***Raduly I**, Szabo ZL, Ciurba A, Todoran N, Antonoaea P, Vlad RA, ***Peterfi O**, Sipos E. *Preparation and characterization of atorvastatin-loaded polyvinylpyrrolidone-based electrospun microfibrinous mats*. Studia Universitatis Babes-Bolyai Chemia **2021**, 66(2): 287-297. IF: 0.447. DOI:10.24193/subbchem.2021.2.25 http://chem.ubbcluj.ro/~studiachemia/issues/chemia2021_2/25Redai_etal_287_297.pdf
3. Redai EM. Antonoaea P. Todoran N. Vlad RA. Bîrsan M. ***Tătaru A**. Ciurba A. *Development and Evaluation of Fluoxetine Fast Dissolving Films: An Alternative for Noncompliance in Pediatric Patients*. Processes **2021**, 9: 778. IF: 2.847. <https://www.mdpi.com/2227-9717/9/5/778>
4. Ciurba A, Antonoaea P, Todoran N, Redai EM, Vlad RA, ***Tataru A**, Muntean DL, Bîrsan M. *Polymeric Films Containing Tenoxicam as Prospective Transdermal Drug Delivery Systems: Design and Characterization*. Processes **2021**, 9(1): 136. IF: 2.847. DOI: 10.3390/pr9010136 <https://www.mdpi.com/2227-9717/9/1/136>
5. Réдай EM, ***Kovács O**, Szabó ZI, Gergely A, Antonoaea P, Todoran N, Vlad RA, Ciurba A, Vlad RA, Dónáth-Nagy G, Sipos E. *Fluoxetin containing pvp-based electrospun nanofibers*, Acta Poloniae Pharmaceutica - Drug Research **2021**, 78(4): 563-571. IF: 0.33. DOI: 10.32383/appdr/142072 https://www.ptfarm.pl/download/?file=File%2FActa_Poloniae%2F2021%2F4%2F563.pdf
6. Antonoaea P, Réдай E, Bîrsan M, ***Tătaru A**, Todoran N, Vlad RA, Muntean LD, Ciurba A. *Dissolution kinetic of meloxicam from hydrophilic matrix-type films for transdermal therapy*. Farmacia **2021**, 69(1): 100-106. IF: 1,433. https://farmaciajournal.com/wp-content/uploads/art-13-Antonoaea_Redai_Ciurba_100-106.pdf
7. Vlad RA, Antonoaea P, Redai EM, Muntean DL, Todoran N, Bîrsan M, ***Tătaru A**, Ciurba A. *Soy polysaccharides therapeutic and technological aspects*. Acta Medica Marisiensis **2021**, 67(4): 199-203. BDI: SCIENDO. <https://doi.org/10.2478/amma-2021-0040>
8. Vlad RA, ***Trifan EB**, Antonoaea P, Redai EM, Kovacs B, Todoran N, ***Tătaru A**, Ciurba A. *Developing and evaluation of orodispersible tablets containing caffeine*. Ro J Pharm Pract **2021**, 14(1): 34-40. BDI: EBSCOhost. DOI: 10.37897/RJPhP.2021.1.5 https://farma.com.ro/articles/2021.1/RJPhP_2021_1_Art-05.pdf
9. Ciurba A, Réдай E, ***Pop I**, Antonoaea P, Todoran N. *Kinetics and Mechanism of Drug Release from Loratadine Orodispersible Tablets Developed without Lactos*. Acta Medica Marisiensis **2017**, 63(1): 23-26; BDI: EBSCO. DOI: <https://doi.org/10.1515/amma-2017-0004>
10. Hancu G, ***Neacșu AM**, Papp LA, Ciurba A. *Simultaneous determination of amoxicillin and clavulanic acid in pharmaceutical preparations by capillary zone electrophoresis*. Bras J Pharm Sci **2016**, 52(2), 281-286. IF: 0.485. <https://doi.org/10.1590/S1984-82502016000200006>
11. Ciurba A, Todoran N, ***Pop M**, Antonoaea P, Réдай E, Al Hussein S. *Modification of the loratadine release mechanism induced by disintegrants in orodispersible tablets*. 10th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, 4-7 April 2016, Glasgow, United Kingdom; Book of Abstracts **2016**, eBook OCLC: 951387404; BDI: WORLDCAT. <https://www.worldcat.org/title/951387404>
12. Hancu G, ***Sasebesi A**, Rusu A, Kelemen H, Ciurba A. *Study of the electrophoretic behavior of cephalosporins by capillary zone electrophoresis*. Adv Pharm Bull **2015**, 5(2): 223-229. IF: 0.875. DOI: [10.15171/apb.2015.031](https://doi.org/10.15171/apb.2015.031)
13. Ciurba A, Hancu G, ***Cojoclea LM**, Sipos E, Todoran N. *Development of new formulation and its evaluation by capillary electrophoresis of tablets containing tramadol hydrochloride and paracetamol*. Pharm Dev Technol, **2013**, 19(7): 833-838. IF: 1.335. DOI: <https://doi.org/10.3109/10837450.2013.836219>

② Student's participation at scientific meetings and publications:





<http://marisiensis.ro/>

1. ***Chirteș D**, Vlad RA, Ciurba A. *Development and pharmacotechnical evaluation of drotaverine orodispersible tablets*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 4th-8th May **2022**, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
2. ***Kisgyorgy S**, Antonoaea P, Vlad RA. *Development and evaluation of new vesicular drug delivery systems containing indomethacin*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 4th-8th May 2022, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2022**, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
3. ***Ghiniță IC**, Ciurba A, Antonoaea P. *New cream formulations for the curative and palliative treatment of different types of burns*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 4th-8th May 2022, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2022**, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
4. ***Coaicea M**, Vlad RA, Antonoaea P. *New polymeric formulations of caffeine energy thin films*. International Congress for students, Young Doctors and Pharmacists Marisiensis, 4th-8th May 2022, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2022**, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
5. ***Șulea D**, ***Roman FE**, ***Pozna I**, ***Șulea IP**, ***Cristia IM**, Vlad RA. *Safety of dermatocosmetics during pregnancy, International Congress for students*. Young Doctors and Pharmacists, Marisiensis, 4th-8th May 2022, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2022**, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
6. ***Mihalcea FM**, Vlad RA, Ciurba A. *Developing a new co-processed excipient. Evaluation of the excipient through SeDeM expert system*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 4th-8th May 2022, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2022**, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
7. ***Gavrilă AG**, Ciurba A, Vlad RA. *Development areas of nanotechnology. Types of nanoparticles and their characterisation*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 4th-8th May 2022, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2022**, 68 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
8. ***Arapan O**, Vlad RA, Ciurba A. *Development and evaluation of caffeine granules by wet granulation technique*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 4th-8th May 2021, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2021**, 67 (Supl.1): 59. ISSN-L 2068-3324, ISSN 2068-3324.
9. ***Ciobanu FIO**. Vlad RA. Ciurba A. *Development and evaluation of drotaverine suppositories*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 25th-29th March 2020, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2020**, 66 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.
10. ***Berteș BA**. Antonoaea P. Vlad RA. *Nanoparticles used for intranasal vaccine delivery*. International Congress for students, Young Doctors and Pharmacists, Marisiensis, 25-29th March 2020, Târgu Mureș, Romania. Book of abstracts, Acta Medica Marisiensis **2020**, 66 (Supl.3). ISSN 2668-7755, eISSN 2668-7763.

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11. Vlad RA, Antonoaea P, Todoran N, Rédai EM, Muntean D-L, ***Bîrsan M**, Ciurba A. *Development and evaluation of cannabidiol orodispersible tablets using a 23 factorial design*. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, University Days, December 8th, 2021, Târgu Mureș. The 14th Conference of PhD Students and Young Doctors **2021**, Târgu Mureș, România. ISSN 2602-1609 (print și online).
12. ***Bîrsan M**, Stan CD, Drăgan M, Antonoaea P, Vlad RA, Todoran N, Ciurba A. *Determination of the rheological and texture characteristics of a cosmetic cream base according to the traditional/industrial preparation*. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, University Days, December 8th, 2021, Târgu Mureș. The 14th Conference of PhD Students and Young Doctors **2021**, Târgu Mureș, România. ISSN 2602-1609 (print și online).



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13. Vlad RA, Antonoaea P, Rédai EM, Todoran N, ***Bîrsan M**, Muntean D-L, Ciurba A. *Evaluation of Compressibility Index by SeDeM system method to predict the behavior of some tablets excipients*. 12th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, Viena, Austria, 11th-14th May **2021**. Book of abstracts.
14. ***Bîrsan M**, Vlad RA, Antonoaea P, Rédai EM, Todoran N, Stan CD, Drăgan M, Ciurba A. *The influence of the preparation method to the moisturizing properties of a new hyaluronic gel*. 12th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, Viena, Austria, 11th-14th May **2021**. Book of abstracts.



<http://cespt2021.org/>

15. ***Gavrilă GA**, Antonoaea P, Vlad RA, Bîrsan M, Ciurba A. *Development and evaluation of bigels containing naproxene*. 13th Central European Symposium on Pharmaceutical Technology, 16th-18th September **2021**, Gdansk, Poland.
16. Bîrsan M, Stan CD, ***Gavrilă GA**, Antonoaea P, Vlad RA, Todoran N, Socha K, Ciurba A. *Determination of mercury in topical products and evaluation of potential risks*. 13th Central European Symposium on Pharmaceutical Technology, 16th-18th September **2021**, Gdansk, Poland.
17. Rédai EM, ***Peterfi O**, Vlad RA, Antonoaea P, Todoran N, Ciurba A, Sipos E. *Characterization of itraconazol electrospun fibrous sheets*. 13th Central European Symposium on Pharmaceutical Technology, 16th-18th September **2021**, Gdansk, Poland.
18. Antonoaea P, Vlad RA, Todoran N, Rédai EM, ***Bîrsan M**, Ciurba A. *Design and of evaluation of new NSAID patches*. 13th Central European Symposium on Pharmaceutical Technology, 16th-18th September **2021**, Gdansk, Poland.

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19. ***Ciobotaru AM**, Rédai EM, ***Tătaru AM**, Vlad RA, Antonoaea P, ***Gavrilă GA**, Ciurba A. *Formulation and evaluation of a new thermosensitive gel formulation for the treatment of peridontal disease*. Congresul Național de Farmacie, ediția a XVIII-a, 15-17 septembrie, **2021**, Oradea, România. Book of abstracts. ISBN 978-606-10-2144-4.
20. Antonoaea P, Vlad RA, Silași O, Rédai EM, Bîrsan M, ***Tătaru A**, ***Gavrilă A**, Ciurba A. Developing and evaluating a new skincare moisturizer cream: the benefits of a combination of vitamins and active phytocomplexes, Congresul Național de Farmacie, ediția a XVIII-a, 15-17 septembrie, **2021**, Oradea, România. Book of abstracts. ISBN 978-606-10-2144-4.
21. Vlad RA, Farczadi L, Imre S, Toma C, Muntean DL, Antonoaea P, Rédai EM, ***Tătaru A**, Bîrsan M, Ciurba A. *Development of an HPLC-UV Method for the Assessment of Cannabidiol in Orodispersible Matrixes*. Congresul Național de Farmacie, Ediția a XVIII-a, 15-17 septembrie, **2021**, Oradea, România. Book of abstracts, ID 133: 166. ISBN 978-606-10-2144-4.
22. Bîrsan M, Stan CD, Drăgan M, Antonoaea P, Vlad RA, Gavrilă GA, ***Tătaru A**, Ciurba A. *Determination of the rheological characteristics of a cosmetic gel according to the traditional/industrial preparation*. Congresul Național de Farmacie, Ediția a XVIII-a, 15-17 septembrie **2021**, Oradea, România. Book of abstracts, ID 176: 171. ISBN 978-606-10-2144-4.
23. Rédai EM, ***Rétyi Z**, Vlad RA, Todoran N, Antonoaea P, Ciurba A, Sipos E. *Pharmaceutical formulation analysis of gelatin-based soft form with loratadine*. Congresul Național de Farmacie, Ediția a XVIII-a, 15-17 septembrie **2021**, Oradea, România. Book of abstracts, ID 176: 171. ISBN: 978-606-10-2144-4.

③ Previous Academic Years Activity

24. ***Trifan EB**, Blendea OV, Vlad RA, Ciurba A. *Liposomes - vaccine delivery systems*. International Congress for Students, Young Doctors and Pharmacists, Marisiensis, 28th March - 1st April **2018**, Târgu Mureș, Romania. Book of abstracts. ISSN 2068-3324, eISSN 2247-6113.
25. Ciurba A, Todoran N, ***Pop M**, Antonoaea P, Rédai E, Al Hussein S. *Modifications of the loratadine release mechanism induced by disintegrants in orodispersible tablets*. 10th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, 4th – 7th April **2016**, Glasgow, United Kingdom. Book of abstracts.
26. ***Muntean RR**, Antonoaea P, Todoran N. *Carboxymethyl cellulose vs. Hidroxyethyl cellulose in developing the formulation of ibuprofen gel for gingival application*. Book of abstracts, Acta Medica Marisiensis **2016**, 61 (Supl.1): 90. ISSN-L 2068-3324, ISSN 2068-3324.
27. ***Biro A**, Ciurba A. *Transepidermal Water Loss - in vitro and in vivo noninvasive measurement of skin barrier function*. Book of abstracts, Acta Medica Marisiensis **2016**, 61 (Supl.1): 88. ISSN-L 2068-3324, ISSN 2068-3324.
28. ***Asoltanei C**, ***Hărșan OR**, Todoran N, Ciurba A. *Using scientific software for mathematical and statistical analysis in developing pharmaceutical or cosmetic formulations*. Book of abstracts, Acta Medica Marisiensis **2015**, 61 (Supl.1): 91-92. ISSN-L 2068-3324, ISSN 2068-3324.
29. ***Borșan AM**, Bogdan AA, Todoran N. *Optimizing pharmaceutical formulation using design of experiment with specialized software*. Book of abstracts, Acta Medica Marisiensis **2015**, 61 (Supl.1): 90-91. ISSN-L 2068-3324, ISSN 2068-3324.
30. ***Pop IV**, Ciurba A, Todoran N. *Pharmaco-technological properties of loratadine fast-disintegrating tablets formulated without lactose*. Book of abstracts, Acta Medica Marisiensis **2015**, 61 (Supl.1): 92. ISSN-L 2068-3324, ISSN 2068-3324.

31. ***Simion EA, *Butucea A**, Todoran N. *Arguments in sustaining the necessity of a guide for community pharmacists in counselling patients about common skin disorders*. Book of abstracts, Acta Medica Marisiensis **2015**, 61 (Supl.1): 84. ISSN-L 2068-3324, ISSN 2068-3324.
32. ***Simion EA**, Todoran N. *Acne treatments: A review of the present for indentifying the future research perspectives*. Book of abstracts, Acta Medica Marisiensis **2014**, 60 (Supl.3): 111. ISSN-L 2068-3324, ISSN 2068-3324.
33. ***Niculoiu I, *Petrovici R**, Todoran N - *Reflexoterapy: A massage which can function as a treatment*. Book of abstracts, Acta Medica Marisiensis, **2014**, 60 (Supl.3): 114. ISSN-L 2068-3324, ISSN 2068-3324.
34. Ciurba A, Todoran N, ***Vrînceanu A**, Eșianu S, Antonoaea P, Rédai EM. *Rheological and mucoadhesive properties of buccal gels containing hydroalcoholic extract*. *Congresul Național al Farmaciștilor din România*, ed. a XV-a, Iași, 24th-27th September **2014**. Book of abstracts: 305. ISBN 978-606-544-252-8.
35. Todoran N, ***Răuță D**, Antonoaea P, Rédai EM, Ciurba A, Sipos E. *Dissolution curve fitting using statistical software*. Book of abstracts, Acta Medica Marisiensis **2014**, 60 (Supl.4): 60. ISSN 2068-3324.
36. Antonoaea P, Todoran N, Ciurba A, Muntean DL, ***Lirca C**. *The preliminary experimental approach in developing a single-layer drug-in-adhesive transdermal systems*. Book of abstracts, Acta Medica Marisiensis **2012**, 58 (Supl3): 66. ISSN 2068-3324.
37. Todoran N, Ciurba A, Antonoaea P, ***Răuță D**. *Mathematical modeling of an in-vitro dissolution profile*. Book of abstracts, Acta Medica Marisiensis **2012**, 58 (Supl.3): 71. ISSN 2068-3324.
38. Todoran N, Drașoveanu A, Imre S, Ciurba A, ***Iștoan RO**. *Two methods for testing the whitening teeth capacity of hydrogen peroxide used in dental gels*. Book of abstracts, Acta Medica Marisiensis **2012**, 58 (Supl.3): 70. ISSN 2068-3324.
39. ***Cojoclea L**, Ciurba A, Donath G. *Development of tramadol hydrochloride and paracetamol tablets using different excipients*. Book of abstracts, Acta Medica Marisiensis **2011**, 57 (Supl.1): 74. ISSN 2068- 3324.