Institute of Cellular Biology and Pathology "Nicolae Simionescu"

Cell and Tissue Engineering Department

CURRICULUM VITAE

Name: Gheţu (Iacomi) Daniela-Mădălina

Nationality: Romanian

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ResearchGate: https://www.researchgate.net/profile/Daniela-Madalina-Ghetu?ev=hdr_xprf

Education

2020 - currently - PhD Student in Biology, Doctoral School of Life Sciences - School of Advanced Studies of The Romanian Academy (SCOSAAR), Bucharest, Romania

- *Supervisor: Acad. Maya Simionescu*
- *Doctoral thesis submitted in May 2025, and defensed on October 2025.*
- *Thesis title: "Identification and utilization of factors secreted by mesenchymal-derived cells in cutaneous wound therapy: in vitro and in vivo studies"*

2018 - 2020 - MSc in Medical Biology, Faculty of Biology, University of Bucharest, Romania

2015 - 2018 - BSc in Biology (Experimental Biology Specialization), Faculty of Biology, University of Bucharest, Romania

2015 - 2020 - Teaching Certificates – Levels I & II, Faculty of Psychology and Education Sciences, University of Bucharest, Romania

2011 - 2015 – High School Diploma – Mathematics & Computer Science, National College "Vasile Alecsandri", Galati, Romania

Professional experience and forming

Nov 2018 – currently - *Research assistant* - Institute of Cellular Biology and Pathology "Nicolae Simionescu", Romanian Academy, Cell and Tissue Engineering Department

- *Supervised by Dr. Irina Titorencu*
- *Conducted advanced experiments for skin regeneration using mesenchymal stromal cells (MSC).*

01/09/2023 – 01/06/2024 - *Visiting Scientist (PhD Student)* - Leiden University Medical Center, Anatomy and Embryology Department, Leiden, Netherlands

- *Funded by a fellowship from the Romanian Ministry of Education.*
- *Worked under Dr. Karine Raymond's supervision;*
- *Co-developed a 3D skin organoid-based wound model for testing innovative therapies;*
- *Studied the effects of secretome isolated from induced pluripotent stem cell-derived fibroblasts on wound healing.*

Member in Scientific Societies:

2018 – currently - The Romanian Society for Cell Biology (RSCB)

Key Skills

- Cell & Molecular Biology: Cell Culture, qPCR, Western blot, Flow Cytometry, Immunostaining, Cryo/Microtomy, Histology Techniques
- 3D Tissue Models: Organoids, Spheroids, Skin Organotypic Cultures
- Data Analysis: GraphPad Prism, Fiji/ImageJ, Microsoft Excel, Adobe Photoshop
- Scientific Communication: 5 Peer-reviewed Papers, 10+ Conference Participations

Driving Licence: B

Languages

Romanian (Native)

English (Second language, advanced)

French (Third language, independent)

Courses, workshops and seminars

1) "3D skin cultures" Training School of COST Action CA21108 – European Network for Skin Engineering and Modeling (NETSKINMODELS) – June 29 – July 3, 2025, Nijmegen, Netherlands.

2) Prof. Dimitris Kardassis: Lectures to the students (Lipoprotein pathways and their roles in the pathophysiology of atherosclerosis; Transcriptional Regulation of Cardiovascular Genes: Basic principles and methodologies in vitro and in vivo; Hormone Nuclear receptors: from basic biology to clinical exploitation in cardiovascular disease), November 14-18, 2024, ICBP "Nicolae Simionescu", Bucharest, Romania.

3) Lab Animal Science Course (University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania, 30.01-10.02.2023.

4) Summer School INTERA-1 "Encapsulation of cells and drugs: materials, procedures and applications", May 13-14, 2021, IBPC "Nicolae Simionescu", Bucharest, Romania.

5) Workshop INTERA "Recent advances in the field of obtaining nanovectors for gene transfection", April 22, 2021, IBPC "Nicolae Simionescu", Bucharest, Romania.

6) Workshop THERAVALDIS "Diabetes in cardiovascular diseases; pathogenic mechanisms and targeted therapies", November 27, 2020, IBPC "Nicolae Simionescu", Bucharest, Romania.

7) Workshop DIABETER "A new therapeutic tool in autoimmune diabetes: Mesenchymal Stromal Cell", November 20, 2020, IBPC "Nicolae Simionescu", Bucharest, Romania.

8) ZEISS Symposium & Workshop in Bucharest, October, 2019, ICBP "Nicolae Simionescu", Bucharest.

9) INTERA-3 Summer School "Intelligent nanoparticles for targeted delivery of bioactive compounds: preparation, characterization and applications", May 23-24, 2019, ICBP "Nicolae Simionescu", Bucharest, Romania.

10) Workshop "Cell Day", April 17, 2019, IBPC "Nicolae Simionescu", Bucharest, Romania.

Publications

Articles

1) Sorca†, B. V., Kaya, D. A., Kaya, M. G. A., Enachescu, M., **Ghetu†, D.-M.**, Enache, L.-B., Boerasu, I., Coman, A. E., Rusu, L. C. Constantinescu, R., & Titorencu, I. Bone Fillers with Balance Between Biocompatibility and Antimicrobial Properties. *Biomimetics*, **2025**, 10(2), 100. Impact factor 2023: 3.4. (†: equal contribution)
2) **Iacomi, D. M.**, Rosca, A. M., Tutuianu, R., Neagu, T. P., Pruna, V., Simionescu, M., & Titorencu, I., Generation of an immortalized human adipose-derived mesenchymal stromal cell line suitable for wound healing therapy, *International Journal of Molecular Sciences*, **2022**, 23(16), 8925, Impact factor 2022: 6.208.
3) Tutuianu, R., Rosca, A. M**., Iacomi, D. M.**, Simionescu, M., & Titorencu, I. Human mesenchymal stromal cell-derived exosomes promote in vitro wound healing by modulating the biological properties of skin keratinocytes and fibroblasts and stimulating angiogenesis, *International Journal of Molecular Sciences*, **2021**, 22(12), 6239, Impact factor 2021: 5.924.
4) Tutuianu, R., Rosca, A. M., Florea, G., Pruna, V., **Iacomi, D. M.**, Radulescu, L. A., Neagu, T. P., Lascar, I., & Titorencu, I. D., Heterogeneity of human fibroblasts isolated from hypertrophic scar, *Romanian Journal of Morphology and Embryology*, **2019**, 60(3), 793–802, Impact factor 2019: 1.5.

Reviews

Ghetu, D. M., Raymond, K., Titorencu, I., & Simionescu, M., Innovative Strategies: Use of Stromal Cell-Derived Secretome for Chronic Wound Therapy. *International Journal of Molecular Sciences*, **2025**, 26(12), 5609, Impact factor 2024: 4.9.

Book chapters

Rosca, A.M., Tutuianu, R., **Ghetu, D.M.**, Titorencu, I., Mesenchymal Stromal Cells for Wound Healing Therapy: From Expectations to Reality Haider, K.H. (eds), *Handbook of Stem Cell Applications*. *Springer*, Singapore, https://doi.org/10.1007/978981-99-0846-2_53-1.

Oral presentations at international conferences

1) **Daniela-Madalina Ghetu**, Ana-Maria Rosca, Raluca Tutuianu, Vasile Pruna, Maya Simionescu, Irina Titorencu, "Aggregates of dermal fibroblasts and bone marrow mesenchymal stromal cells exhibit different characteristics: implications for regenerative therapy", International Conference and XXXIX scientific session of the Romanian Society for Cell Biology, October 21-23, 2022, Cluj-Napoca, Romania.
2) **Daniela-Madalina Iacomi**, Ana-Maria Rosca, Raluca Tutuianu, Vasile Pruna, Irina Titorencu, Maya Simionescu, "Generation and characterization of an immortalized human adipose mesenchymal stromal cell line", International Conference under the aegis of the Romanian Academy 42nd Anniversary Symposium of the Institute of Cellular Biology and Pathology "Nicolae Simionescu" held jointly with 38th annual scientific session of The Romanian Society for Cell Biology, November 4-6, 2021, Online Conference.

Posters presented at international meetings

1) **Daniela Madalina Ghetu**, Raluca Tutuianu, Madalina Georgiana Albu Kaya, Ana-Maria Roşca, Irina Titorencu, "Development of three-dimensional intestinal organotypic models using various collagen-based dermal equivalents", poster presented at the international conference "Applications of Chemistry in Nanosciences and Biomaterials Engineering (NanoBioMat)", June 25-27, 2025 (Summer Edition), online participation.

2) **Daniela Madalina Ghetu**, Raluca Tutuianu, Ana Maria Rosca, Maya Simionescu, Irina Titorencu, "Three-dimensional aggregation stimulates the pro-angiogenic properties of adult human dermal fibroblasts", poster presented at the anniversary symposium with international participation "Aspiration, inspiration and innovation in exploring new frontiers in biomedical research", December 17-18, 2024, Bucharest, Romania.

3) Raluca Tutuianu, **Daniela Madalina Ghetu**, Irina Titorencu, Ana Maria Rosca, "Conditioned Medium Derived from Fibroblasts Cultured in Spheroids Promotes Skin Regeneration in a Murine Model of Cutaneous Wound", poster presented at the scientific event ARSAL Symposium 2024 "Severity Assessment and the 3R Concept in Projects Using Animals in Experimentation", March 29, 2024, organized by the Romanian Association for Laboratory Animal Science and hosted by the National Institute of Research and Development in Pathology and Biomedical Sciences "Victor Babeș", Bucharest, Romania.

4) Vasile Prună, **Daniela Madalina Gheţu**, Diana Vrânceanu, Cosmin Cotruţ, Alina Vlădescu (Dragomir), Irina Titorencu, Enhanced osteogenic differentiation of human adult mesenchymal stem

cells cultured on plate-like hydroxyapatite coatings, poster presented at the international conference "Applications of Chemistry in Nanosciences and Biomaterials Engineering (NanoBioMat)", June 28-30, 2023 (Summer Edition) –online participation.

5) Raluca Tutuianu, Ana-Maria Rosca, **Daniela Madalina Ghetu**, Vasile Pruna, Madalina Albu Kaya, "Evaluation of mesenchymal cell-derived products as therapeutics for skin regeneration", poster presented at the scientific event "1st NETSKINMODELS Network event", February 14-18, 2023, Bratislava, Slovakia.

6) **Daniela-Madalina Ghetu**, Ana-Maria Rosca, Raluca Tutuianu, Vasile Pruna, Maya Simionescu, Irina Titorencu, "Human dermal fibroblasts and bone marrow mesenchymal stromal cells display different characteristics when cultured in 3D settings", poster presented at the annual scientific symposium ICBP-NS with international participation "43 years on the never-ending road of cardiovascular discoveries", December 8-9, 2022, Bucharest, Romania.

7) Radulescu Andreea Luminita, **Daniela-Madalina Iacomi**, Gabriela Florea, Ana-Maria Rosca, Raluca Tutuianu, Irina Titorencu, "Obtaining and characterization of mesenchymal stem cells derived from adipose tissue", poster presented at the conference dedicated to International Microorganism Day (ZIM), September 17, 2021, Bucharest, Romania.

8) Gabriela Florea, **Daniela-Madalina Iacomi**, Raluca Tutuianu, Vasile Pruna, Ana-Maria Rosca, Andreea Luminita Radulescu, Ioan Lascar, Maya Simionescu, Irina Titorencu, "Isolation and characterization of human hypertrophic derived myofibroblasts", poster presented at the symposium "A fascinating 40-year journey to discover the secrets of the cell for human health", September 19-20, 2019, Bucharest, Romania.

9) **Daniela-Madalina Iacomi**, Gabriela Florea, Ana Maria Rosca, Vasile Pruna, Raluca Tutuianu, Tiberiu Paul Neagu, Irina Titorencu, "Generation and characterization of an immortalized human adipose mesenchymal stromal cell line" poster presented at "The 11th National Congress with International Participation and the 37th Annual Scientific Session of the Romanian Society of Cell Biology" June 20-23, 2019, Constanța, Romania. Abstract published in *Book of Abstracts*, No. 45, p. 70.

10) Gabriela Florea, **Daniela Madalina Iacomi**, Raluca Tutuianu, Vasile Pruna, Ana Maria Rosca, Ioan Lascar, Maya Simionescu, Irina Titorencu, "Modeling of fibroblast-to-myofibroblast differentiation in vitro", poster presented at "The 11th National Congress with International Participation and the 37th Annual Scientific Session of the Romanian Society of Cell Biology", June 20-23, 2019, Constanța, Romania. Abstract published in Book of Abstracts, No. 45, p. 69.

Collaborator on the following projects

National Projects

1) Innovative antimicrobial collagen based three dimensional scaffolds for craniofacial reconstruction **-** PN-IV-P7-7.1-PED-2024-1446 – Project duration: 2025-2027.
2) Enhancing the paracrine properties of fibroblasts by three-dimensional aggregation for chronic wounds therapy (FibroTher) - PN-III-P1-1.1-TE-2021-1344 - Project duration: 2022-2024.

3) Optimization of mesenchymal stem cell interaction with innovative biomimetic structures for tissue engineering applications (BioMimCells) - PN-III-CERC-CO-PED-3-2021 - Project duration: 2022-2024.
4) Bioactive Nanostructures for Innovative Therapeutic Strategies (NANO-LIFE) - PN-III-P1-1.2-PCCDI-2017-0749 - Project duration: 2018-2020.

International Projects

1) Enhancing the endogenous anti-oxidant and cholesterol removal potential by gene editing in fatty liver disease; pre-clinical studies (THERAGENLIV) - PNRR-III-C9-2022-I8-197 – Project duration: 2023-2026.
2) COST Action (European Cooperation in Science and Technology) CA21108 - European Network for Skin Engineering and Modeling (NETSKINMODELS), Project duration: 2022-2026.

Awards

1) "Scientific Achievements – Original Article" Award offered by the Ministry of Education and Research and UEFISCDI: Prize for Research Results - Web of Science Articles - 2023, within PN IV, Program 5.2 - Human Resources, Subprogram 5.2.3 - Support, List 1 - First applications submitted for published articles in 2021 and 2022 - 13.03.2023 for the article: "Generation of an Immortalized Human Adipose-Derived Mesenchymal Stromal Cell Line Suitable for Wound Healing Therapy" published in the International Journal of Molecular Sciences, Volume 23(16), 8925, 2022. (**Iacomi, D. M.**, Rosca, A. M., Tutuianu, R., Neagu, T. P., Pruna, V., Simionescu, M., & Titorencu, I.)
2) "Scientific Achievements – Original Article" Award offered by the Ministry of Education and Research and UEFISCDI for "Scientific Achievements – Original Article" Subprogram 1.1 - Human Resources - Prize of Research Results - Articles, Competition 2021, Evaluation Results_List 2 - Award Applications Submitted for Articles Published in 2021_18.11.2021, in November 2021, for the article "Human mesenchymal stromal cell-derived exosomes promote *in vitro* wound healing by modulating the biological properties of skin keratinocytes and fibroblasts and stimulating angiogenesis" published in the International Journal of Molecular Sciences, Volume 22(12), 6239, 2021. (Tutuianu, R., Rosca, A. M., **Iacomi, D. M**., Simionescu, M., & Titorencu, I.).

Fellowships

PhD Fellowship: Romanian Academy (SCOSAAR): 2020-2023

Doctoral Mobility Fellowship, Ministry of Education, Romania – for a 9-months research stage abroad (Leiden, the Netherlands): September 2023 – May 2024

Patents

Co-author in one national patent registered at OSIM (OSIM No. A/00370/26.06.2021) entitled "Composite polymer hydrogels with antibacterial and wound-healing properties and their preparation method", OSIM No. A/00370/26.06.2021, inventors: Simionescu M., Roşca A.M., Titorencu I.D., **Iacomi D. M.**, Ţuţuianu R., Prună V., Lasca I., Chercheriţă I.A., Neagu P.T., Mogoantă L., Mogoşanu G.D., Pirici N.D., Streba C.T., Birca A.C., Burduşel A.C., Stoica A.E., Grumezescu A.L., Chircov C.