Alexandrina Burlacu

Nationality: Romanian **Date of birth:** 07/08/1974 **Place of birth:** Bucharest

Gender: Female **Phone number:** (+40) 0741202947

Email address: alexandrina.burlacu@genomica.gov.ro

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Work: 37, Dionisie Lupu, 2nd District, 020021 Bucharest (Romania)

LANGUAGE SKILLS

Mother tongue(s): Romanian

Other language(s):

English

LISTENING C1 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2

SPOKEN INTERACTION C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

WORK EXPERIENCE

Genomics Research and Development Institute, Bucharest, Romania

Scientific Director

[01/04/2025 – Current]

Institute of Cellular Biology and Pathology „N. Simionescu", Bucharest, Romania

Principal Investigator

[11/08/1997 – 30/03/2025]

Scientific Researcher grade I (since 2015)
Coordinator of Stem Cell Biology Laboratory (since 2013)
PhD Coordinator (since 2018)
Supervisor of Graduate Students and Postdoctoral Fellows

Scientific Interest:
Stem cell-based approaches
Cardiac regenerative therapies
RNA analysis and gene expression studies

Main skills:
Derivation of cell lines (adult and embryonic stem cells, neonatal and adult cardiomyocytes, fibroblasts, endothelial cells, etc);
Cell culture assays (2D and 3D cultures; clonal cell line generation);
Molecular biology assays (gene expression analysis, cloning, CRISPR/Cas9 genome editing, viral transduction);
Flow cytometry and cell sorting;
Experimental modelling and cell transplantation procedures.

Expert evaluator for research funding agencies

Biomedical scientist

[2012 – Current]

Panel Member:
H2020 SC1-BHC-2018-2020 competition (Societal Challenge 1, Single Stage 2019, SC1-BHC-07-2019: Regenerative Medicine: from new insights to new applications), Brussels, June 2018
HORIZON-HLTH-2024-single-stage competition (HORIZON-HLTH-2024-TOOL-11-02: Bio-printing of living cells for regenerative medicine), Brussels, June 2024.
ERA-NET competitions - Cardiovascular Diseases (ERA-CVD). 2018 and 2019
UEFISCDI – Research & Higher Education Funding, Romania, 2017 and 2020

Remote / Individual Evaluator:
HORIZON-MSCA-2025-PF competition, October- December 2025
Food and Health Bureau, Health and Medical Research Fund, Hong Kong, 2012 - ongoing
National Science Center, Poland, 2022 and 2025
UEFISCDI – Research & Higher Education Funding, Romania, 2016-ongoing

Bentham Science

Editor-in-chief

[2012 – 2013]

Guest Editor, *Current Stem Cell Research and Therapy*, Special Issue: 'Advances in Stem Cell Therapy for Myocardial Regeneration', July 2013, 8(4)

EDUCATION AND TRAINING

Habilitation in Biology

Romanian Academy [03/06/2018 – Current]

Postdoctoral Researcher

"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania [2009 – 2012]

Development of tissue engineering strategies using genetically modified adult stem cells to improve engraftment and survival in infarcted myocardium

PhD in Biology

Institute of Cellular Biology and Pathology „N. Simionescu" [1997 – 2004]

City: Bucharest | **Country:** Romania | **Final grade:** Summa cum laudae

Cellular and molecular aspects induced by oxidative stress in the myocardium; in vitro cellular differentiation for regenerative therapy of ischemic myocardium (Coordinator: Dr. Maya Simionescu)

Licence in Biology

Faculty of Biology, University of Bucharest, Biochemistry Department [1992 – 1997]

Bacalaureate diploma

High School of Mathematics and Physics, Zalau, Romania [1988 – 1992]

PUBLICATIONS

Number of publications: 50 (listed in Annex 1)
First author of 34 publications
2 patents (First author on one patent)
Hirsch index (Scopus): 18
Number of citations (Scopus): ~1,300

Top 5 publications from the last five years:

1. Marinescu-Colan CI, Nastase-Rusu EG, Neculachi CA, Martelli F, Cherry L, Preda MB, **Burlacu A**. From cancer to heart fibrosis - GLIPR1 highlights a subset of myofibroblasts responsive to mesenchymal stem cell therapy after myocardial infarction. Biomed Pharmacother. 2025 Jun; 187:118087. doi: 10.1016/j.biopha.2025.118087. Epub 2025 Apr 29. PMID: 40306172.
2. Preda MB, Nastase-Rusu EG, Neculachi CA, Zhong X, Voellenkle C, Mazure NM, Balacescu O, Ivan C, Zheng XW, Gherghiceanu M, Lebrigand K, Simionescu M, Martelli F, Mari B, Catrina SB, **Burlacu A,** Ivan M. miR-210 locus deletion disrupts cellular homeostasis: an integrated genetic study. Sci Rep. 2025 Jul 2;15(1):22659. doi: 10.1038/s41598-025-07572-8. PMID: 40595052; PMCID: PMC12217331.
3. Kardassis D, Vindis, Stancu CS, Toma L, Gafencu AV, Georgescu A, Alexandru-Moise N, Molica F, Kwac BR, **Burlacu A**, Hall IF, Butoi E, Magni P, Wu J, Novella S, Gamon LF, Davies MJ, Caporali A, de la Cuesta F, Mitić T. Unravelling molecular mechanisms in atherosclerosis using cellular models and omics technologies. Vasc Pharmacol, 2024 Dec 10:158:107452. doi: 10.1016/j.vph.2024.107452.
4. Rusu-Nastase EG, Lupan AM, Marinescu CI, Neculachi CA, Preda MB, **Burlacu A**. MiR-29a Increase in Aging May Function as a Compensatory Mechanism Against Cardiac Fibrosis Through SERPINH1 Downregulation. Front Cardiovasc Med. 2022 Jan 18;8:810241. doi: 10.3389/fcvm.2021.810241. PMID: 35118144; PMCID: PMC8804242.
5. Lupan AM, Rusu EG, Preda MB, Marinescu CI, Ivan C, **Burlacu A**. miRNAs generated from Meg3-Mirg locus are downregulated during aging. Aging (Albany NY). 2021 Jun 22;13(12):15875-15897. doi: 10.18632/aging.203208. Epub 2021 Jun 22. PMID: 34156971; PMCID: PMC8266327.

NETWORKS AND MEMBERSHIPS

Specializations at international institutions:
Royal College of Surgeons, Dublin, Ireland (2003); **Biomedical Scientific Park Rome**, Italy (2005); **Cold Spring Harbor Laboratory**, New York, USA (2006); **Huddinge Karolinska Hospital**, Stockholm, Sweden (2006); **University of Minnesota**, Minneapolis, USA (2007); **University of York** , UK (2007); Department of Heart Surgery, **University of Heidelberg**, Germany (2011); Institute for Molecular Cardiovascular Research, **University of Aachen**, Germany (2012)

HONOURS AND AWARDS

[2013] Romanian Academy
Romanian Academy Award

[2012] Academician Nicolae Cajal Foundation
Herbert Berler-Barbu Award

PATENTS

OSIM Patents

1. **Burlacu A,** Mitroi DN, Preda MB, Plesu M, Rosca A-M, Grigorescu G, Popa M, Corotchi C, Droc I, Gussi IL. Ex vivo procedure for engraftment of stem cells into viable slides of human cardiac tissue, patent application, State Office for Inventions and Trademarks, 2013, A/00845.
2. Dumitrescu M., Trușcă V.G., **Burlacu A**., Simionescu M., Askenasy N., Gafencu A.V. Adenovirus containing the murine Fas ligand mini-gene for inducing functional Fas ligand protein expression, pattent application, State Office for Inventions and Trademarks, 2019, A00512.

MANAGEMENT AND LEADERSHIP SKILLS

Coordinator or lead partner in 16 nationally and internationally funded competitive projects

1. ***(Coordinator)*** "Targeting Cardiac Fibrosis in Heart Failure: Challenges and Potential Solutions Based on ncRNA Therapeutics," PNRR/2022/C9/MCID8/2023–2026, Project Director: Dr. Fabio Martelli / Internal Scientific Coordinator: Dr. Alexandrina Burlacu; €2M
2. ***(Coordinator)*** "Fundamental mechanisms of ventricular remodeling evaluated at the level of the cardiac fibroblast population in the aged infarcted myocardium," PN-III-P4-ID-PCE-2020-1340, 2020–2023; €240K
3. ***(Lead Partner)*** "Exploring new pathways in age-related heart diseases," ERA-CVD Joint Transnational Projects 2017–2020 (Role: lead partner). Partners: (1) Hannover Medical School; (2) Maastricht University; (3) Humanitas Research Hospital; (4) Centro Nacional de Investigaciones Cardiovasculares Carlos III; (5) University of Lorraine; (6) Institute of Cellular Biology and Pathology; €200K
4. ***(Coordinator)*** "Ischemic tissue engineering by combinatorial transplant: piecing together the puzzle to gain mutual benefits for graft survival and host tissue repair," PN-II-RU-TE-2014-4-1614, 2014–2016; €125K
5. ***(Coordinator)*** "Improving institutional competitiveness in the field of type 1 diabetes through the development of an innovative mesenchymal stromal cell immunotherapy concept," POC-A.1-A.1.1.4-E-2015, 2016–2020, Project Director: Dr. Nadir Askenasy / Internal Scientific Coordinator: Dr. Alexandrina Burlacu (€1.7M)
6. ***(Lead Partner)*** "New ocular implant with high biocompatibility and proliferation rate," PCCA-2 2014–2017; Partners: (1) "Carol Davila" University of Medicine and Pharmacy, Bucharest; (2) INCDMNR; (3) Politehnica University of Bucharest; (4) IBPC "Nicolae Simionescu"; (5) SC SITEX 45 SRL
7. ***(Coordinator)*** "Preclinical model of cell therapy employing protein tyrosine phosphatase–microRNA interplay to optimize neovascularization," 2012–2015, PCCA-1. Partners: (1) IBPC "Nicolae Simionescu"; (2) Institute of Biochemistry of the Romanian Academy; (3) "Victor Babeș" National Institute, Bucharest, Romania (€500K)
8. ***(Coordinator)*** "Development of strategies to improve engraftment and differentiation of transplanted stem cells in the infarcted myocardium," PN-II-RU-TE-1, 2010–2013 (€150K)
9. ***(Coordinator)*** "Comparative analysis of molecular signals involved in the differentiation of embryonic stem cells and adult multipotent progenitor cells in mice," UEFISCU, PN-II-ID-PCE-2007-1, 2007–2010
10. ***(Coordinator)*** "In vitro manipulation of adult progenitor cells and establishing the efficiency of autologous cell transplantation in myocardial infarction treatment," MEdC – UEFISCSU, 2005–2008.
11. ***(Coordinator)*** "Ischemia-induced myocardial changes and therapeutic strategies for repopulating ischemic myocardium through cell transplantation," BIOTECH, 2003–2005
12. ***(Coordinator)*** "Study of the cumulative effect of oxidative stress and cytokines on endothelial cells; implications in atherosclerosis," Romanian Academy Grants, 2003–2004
13. ***(Coordinator)*** "Mechanisms and signaling pathways by which oxidative stress and cytokines induce apoptosis in endothelial cells; effect of antioxidants and drugs," MEC-CERES, 2001–2004
14. ***(Coordinator)*** "Endothelial cell apoptosis induced by oxidative conditions," GAR 2000–2001
15. ***(Coordinator)*** "Endothelial cell apoptosis under diabetic conditions," MEC-ANSTI, 1999–2000
16. ***(Coordinator)*** "Interaction of components from diabetic patient serum with microvasculature: induction of apoptosis in endothelial cells," GAR 1999–2000

Teaching activities

2004–2013: Lecturer in the Postgraduate Courses "Advanced Study Course in Cellular and Molecular Medicine," held annually at IBPC "N. Simionescu"

2012–2013: University Assistant, Department of Biochemistry, "Carol Davila" University of Medicine and Pharmacy