

Listă produse/tehnologii/metodologii dezvoltate prin activități de cercetare rezultate în urma unor contracte economice sau de cercetare științifică

1. Tehnologie de producere adenovirusuri pentru cercetarea biomedicală, IBPC-NS
2. Tehnologie de producere lentivirusuri pentru cercetarea biomedicală, IBPC-NS
3. Tehnologie de criogenare a amestecului alcool polivinilic/dextran (în diferite rapoarte) pentru obținerea de bio-matrici 3D, IBPC-NS
4. Dezvoltarea de membrane electrofilate pentru ingineria tisulară care permit infiltrarea și atașarea celulelor, precum și difuzia mediului de cultură cu nutrienți, IBPC-NS
5. Model 3D de valvă aortică decelularizată, populată cu VEC și VIC umane pentru validarea tintelor terapeutice în condiții diabetice, IBPC-NS
6. Model 3D bio-printat pentru validarea tintelor terapeutice în condiții diabetice, IBPC-NS
7. Model experimental de injectare a celulelor progenitoare (EPC/ADSC) nemodificate sau modificate genetic, IBPC-NS
8. Procedeu de obținere de nanoparticule biomimetice obținute prin acoperirea nanoemulsiilor lipidice cu membrane plasmatică izolate de la monocite/macrofage, Contract PN-III-P4-ID-PCE-2020-2465/2021-2023 UEFISCDI, IBPC-NS
9. Metodologie de caracterizare a nanoparticulelor privind diametrul hidrodinamic și potențialul electrocinetic folosind Zetasizer Nano ZS (Malvern Instruments, Malvern, UK), eficiența de incorporare a medicamentelor și stabilitatea nanoparticulelor în timp și în medii biologice folosind tehnica UHPLC, Contract PN-III-P4-ID-PCE-2020-2465/2021-2023 UEFISCDI, IBPC-NS
10. Procedeu de obținere de nanoparticule pentru transportul de ARN de interferență, Contract POC-E - Theravaldis MySMIS:104362, IBPC-NS
11. Metodologie de caracterizare a nanoparticulelor încărcate cu ARN de interferență (determinare diametrul hidrodinamic, potențialul Zeta, eficiența de incorporare a ARN, stabilitatea nanoparticulelor în timp și în medii biologice, Contract PN-III-P4-ID-PCE-2020-2465/2021-2023 UEFISCDI, IBPC-NS.
12. Procedeu de obținere de nanoparticule lipidice încărcate cu polifenoli, Contract 13PCCDI/2018 UEFISCDI, IBPC-NS

13. Metodologie de caracterizare a nanoparticulelor lipidice încărcate cu polifenoli (determinare diametrul hidrodinamic, potentialul Zeta, eficiența de incorporare a ARN, stabilitatea nanoparticulelor în timp și în medii biologice, Contract 13PCCDI/2018 UEFISCDI, IBPC-NS.
14. Metodă de obținere a Fitozomilor cu Compuși Biologic Activi din Rizomi de Ghimbir și Fructe de Măceș cu Biodisponibilitate Crescută, Contract UEFISCDI PED-270/2020-2022, IBPC-NS
15. Protocol validat pentru predicția evoluției pacienților cu infarct miocardic prin cuantificarea unui set de markeri epigenetici (miARN și mtADN) în plasmă, Contract UEFISCDI PED-257/2020-2022, IBPC-NS
16. Pachete de date indexate ISI în baza de date internațională PRIDE (Proteomics Identification Database) PXD035692 - Coronary alarmins as residual risk markers of atherosclerosis under hypolipidemic therapy - Made public: 2022-10-03; Contract XploreCAD No.41/2107, JTC 2017, (2017-2020) ERA-CVD, IBPC-NS; Stiftelsen SINTEF
17. Pachete de date indexate ISI în baza de date internațională PRIDE (Proteomics Identification Database) PXD035673 - Exosome proteomics reveals the deregulation of coagulation, complement and lipid metabolism proteins in gestational diabetes mellitus - Made public: 2022-09-22; Contract PN-III-P4-PCE2021-1344, nr. 114/2022; PN-III-P1-1.1-TE-2021-1161 nr. 154/2022, IBPC-NS
18. Pachete de date indexate ISI în baza de date internațională PRIDE (Proteomics Identification Database) PXD033683 - Short-term blockade of pro-inflammatory alarmin S100A9 favorably modulates left ventricle proteome and related signaling pathways involved in post – myocardial infarction recovery - Made public: 2022-05-19; Contract PCCF nr. 5/2018, IBPC-NS
19. Pachete de date indexate ISI în baza de date internațională PRIDE (Proteomics Identification Database) PXD026380 - Proteomic Analysis of Estrogen Mediated Enhancement of MSC-Induced Angiogenesis in vivo - Made public: 2022-02-17, IBPC-NS
20. Pachete de date indexate ISI în baza de date internațională PRIDE (Proteomics Identification Database) PXD026379 - Alteration of DAMPs and regulated cell death under hyperlipidemic stress; Made public: 2022-02-22, Contract XploreCAD No.41/2107, JTC 2017, (2017-2020), ERA-CVD, IBPC-NS; Stiftelsen SINTEF
21. Pachete de date indexate ISI în baza de date internațională PRIDE (Proteomics Identification Database) PXD018053 - Mouse early diabetic nephropathy LC-MS/MS analysis; Made public: 2020-09-24, IBPC-NS

22. Pachete de date indexate ISI in baza de date internationala PRIDE (Proteomics Identification Database) PXD016135 - Proteomics of regenerated tissue in response to a titanium implant with a bioactive surface in a rat tibial defect model; Made public: 2021-04-29, Contracte PN-II-PCCA-2011-3 nr. 153/2012, 63PCCDI/2018; PN-III-P1-1.2- PCCDI-2017-072, core programs 16N/2019; PN-III-P1-1.1-PD-2016-1369, IBPC-NS; Faculty of Engineering and Management of Technological Systems, Politehnica University of Bucharest; National Institute for Lasers, Plasma and Radiation Physics, Institute of Biochemistry of the Romanian Academy; Faculty of Veterinary Medicine, University of Agronomic Sciences and Veterinary Medicine of Bucharest
23. Model de cultura organotipica de piele umana realizat pentru testarea produsilor cu potential terapeutic in vindecarea ranilor, Contract PN-III-P1-1.1-TE-2016-1592, nr. 3/2018, CNCS-UEFISCDI, IBPC-NS
24. Procedeu de cultivare in sistem 3D a fibroblastelor dermale umane pentru imbunatatirea proprietatilor paracrine in vederea utilizarii secretomului in terapia ranilor cutanate, Contract PN-III-P1-1.1-TE-2021-1344, nr. 149/2022, CNCS-UEFISCDI, IBPC-NS
25. Procedeu de obtinere a unui bioconstruct pe baza de fibrina, nanoparticule de Ag si exosomi in vederea utilizarii lui in vindecarea ranilor cutanate, Contract PN-III-P1-1.2-PCCDI-2017-074, nr. 45/2018 CNCS-UEFISCDI, IBPC-NS
26. Dezvoltarea unei terapii aceluare pe baza de exosomi derivati din celule stromale mezenchimale umane pentru vindecarea ranilor cutanate, Contract PN-III-P1-1.2-PCCDI-2017-074, nr. 45/2018 CNCS-UEFISCDI, IBPC-NS
27. Obtinerea unei linii imortalizate de celule stem mezenchimale umane derivate din tesut adipos (ADSC) in vederea utilizarii ei ca sursa inepuizabila de material biologic pentru studii de medicina regenerativa, Contract PN-III-P1-1.2-PCCDI-2017-074, nr. 45/2018 CNCS-UEFISCDI, IBPC-NS
28. Procedeu de obtinere a unui biomaterial functionalizat cu secretomul provenit de la celule stromale mezenchimale umane in vederea utilizarii lui in terapia ranilor cutanate, Contract PN-III-P1-1.2-PCCDI-2017-074, nr. 45/2018 CNCS-UEFISCDI, IBPC-NS
29. Structuri biomimetice inovative cu capacitate osteoinductiva pe baza de hidroxiapatita cu nanotopografii diferite cu aplicabilitate in ingineria tesutului osos, Contract PN-III-P2-2.1-PED-2021-4275, nr: 621/2022, CNCS-UEFISCDI/ responsabil partener Dr. Irina Titorencu, IBPC-NS
30. Procedeu pentru imortalizarea fibroblastilor cardiaci ventriculari, IBPC-NS

Listă tehnologii și servicii puse la dispoziția altor centre de cercetare pe bază de contract/colaborări proiecte (inclusiv postate în EERTIS - <https://eertis.eu/>) sau Open access

1. Cursuri tehnici culturi celulare - <https://eertis.eu/ersv-2200-000s-5838>
2. Teste de biocompatibilitate - <https://eertis.eu/ersv-2200-000l-5835>
3. Investigarea in vitro a reacțiilor inflamatorii induse de biomateriale - <https://eertis.eu/ersv-2200-000e-5832>
4. Teste in vitro de resorbție osoasă - <https://eertis.eu/ersv-2200-000t-5829>
5. Izolare și purificare exosomi - <https://eertis.eu/ersv-2200-000m-5826>
6. Experimental studies of physiology, pathophysiology, and pharmacology (exploration of vascular function / dysfunction): The investigation of vascular reactivity (contraction and relaxation) of small and large blood vessels to vasoconstrictor/vasodilator agents, drugs and agonists/antagonists of key molecules in involved signalling pathways using vessel wire myograph (Multi Wire Myograph System – 620M) - <https://eertis.eu/ersv-2200-000j-5715>
7. Laser Capture Microdissection: Collection of precisely defined cell populations, or other regions-of-interest from tissue sections without contamination using ZEISS PALM Microbeam Laser Microdissection System - <https://eertis.eu/ersv-2200-000q-5718>
8. Nitric Oxide Electrochemical Detection: Measurement of nitric oxide production in biological systems by using inNO-T Nitric Oxide Measurement System - <https://eertis.eu/ersv-2200-000b-5721>
9. Analysis of Extracellular Vesicles: (1) Isolation of extracellular vesicles (microvesicles and exosomes) by centrifugation and ultracentrifugation; (2) Characterization and quantification of extracellular vesicles (microvesicles and exosomes) by Flow Cytometry and Malvern Zetasizer Nano ZS - <https://eertis.eu/ersv-2200-000h-5724>
10. Biochemistry Analysis: Dosage of plasma parameters: blood glucose, cholesterol (LDL, HDL), triglycerides, fetuin, ALT, AST, HbA1c - <https://eertis.eu/ersv-2200-000p-5727>
11. Protein Analysis: (1) Protein quantification by Bradford, Lowry, Bicinchoninic Acid (BCA) and Amido Black assays using spectrophotometer; (2) Protein detection by ELISA method using spectrophotometer; (3) Enzymes expression and activity using spectrophotometer; (4) Protein expression evaluation by Western Blot and immunocytochemistry

(immunofluorescence or chemidetection in phase contrast microscopy) - <https://eertis.eu/ersv-2200-000a-5730>

12. Genetic Analysis: (1) RNA/DNA quantification using Nanodrop 2000c; (2) Gene expression evaluation by RT-qPCR; (3) Analysis of microRNAs by RT-qPCR - <https://eertis.eu/ersv-2200-000g-5733>
13. Analysis of Platelets: Isolation and quantification of platelets by centrifugation and Flow Cytometry - <https://eertis.eu/ersv-2200-000n-5736>
14. Analysis of Mesenchymal Stem Cells (MSC) derived from Adipose Tissue (ADSC) or from Bone Marrow (BM-MSC): Obtaining and characterizing ADSC or BM-MSC by Flow Cytometry - <https://eertis.eu/ersv-2200-000u-5739>
15. Analysis of endothelial progenitor cells (EPCs): Isolation, characterization and quantification of circulating EPCs by flow cytometry - <https://eertis.eu/ersv-2200-000f-5742>
16. Lentiviral production - <https://eertis.eu/ersv-2200-000g-5652>
17. Cell encapsulation - <https://eertis.eu/ersv-2200-000v-5649>
18. Plasmid design and cloning strategies - <https://eertis.eu/ersv-2200-000p-5646>
19. Molecular cloning - <https://eertis.eu/ersv-2200-000b-5640>
20. Cell transfection - <https://eertis.eu/ersv-2200-000q-5637>
21. Detection of protein expression - <https://eertis.eu/ersv-2200-000j-5634>
22. Gene expression and gene regulation research activities - <https://eertis.eu/ersv-2200-000c-5631>
23. Pyrosequencing - <https://eertis.eu/ersv-2200-000h-5643>
24. Electrospun 3D scaffold populated with valvular cells for drug testing - <https://eertis.eu/ERIF-2000-000R-0336>
25. Blood cells or nanoparticles interactions with endothelial cells in controlled flow conditions simulating blood flow- <https://eertis.eu/ersv-2200-000m-5664>
26. Synthesis and characterization of polyphenol-loaded nanoparticles. The service is the result of the implementation of INTERA project PN-III-P1-1.2-PCCDI-2017-0697 (Contract nr. 13PCCDI/2018).- <https://eertis.eu/ersv-2200-000l-5673>
27. Biocompatibility tests including tests for in vitro cytotoxicity on cultured cells, blood compatibility of nanoparticles, blood tests to assess the organ functionality after nanoparticle administration are provided. - <https://eertis.eu/ersv-2200-000t-5667>

28. In vitro and in vivo studies of nanoparticle-based drug delivery systems. The in vitro and in vivo characterization of nanoparticles (size, shape, in vitro studies to follow the stability, controlled release, biochemistry, gene and protein expression, signalling pathways activated/inhibited by nanoparticles, organ localization using IVIS vivo imaging system Caliper 200, evaluation of therapeutic effects) are also offered. - <https://eertis.eu/ersv-2200-000e-5670>
29. Genetic and epigenetic analysis: Gene and protein expression of proteins and receptors in cells and tissues; Gene polymorphisms (SNP) analysis; Gene editing (CRISPR/Cas9); Analysis of miRNAs in biological samples: circulation (serum/plasma, lipoproteins), organs/tissues, cells in culture - <https://eertis.eu/erlb-2200-000e-0709>
30. Biochemistry analysis: Enzymes expression and activity: matrix metalloproteases, paraoxonase 1, phospholipase A2, cholesteryl ester transfer protein, myeloperoxidase, lipoprotein lipases - <https://eertis.eu/erlb-2200-000e-0709>
31. Signaling pathways analysis: Identification of the signaling pathways in primary cultures and in cell lines - <https://eertis.eu/erlb-2200-000e-0709>
32. Animal models: hyperlipidemic/hyperglycemic hamster; metabolic studies, biochemistry, tissue immunodetection, signaling pathways in organs, therapeutic interventions: design of new drugs and in vivo testing - <https://eertis.eu/erlb-2200-000e-0709>
33. Chromatographic analysis: Chromatographic analysis of fatty acids, oxidized lipids, vitamins - <https://eertis.eu/erlb-2200-000e-0709>
34. Peptide and protein liquid chromatography-mass spectrometric analysis - <https://eertis.eu/ersv-2200-000t-5748>
35. Polymerase chain reaction and real time polymerase chain reaction; - <https://eertis.eu/ersv-2200-000e-5751>
36. Single dimension protein gel electrophoresis;- <https://eertis.eu/ersv-2200-000l-5754>
37. Two dimensional gel electrophoresis (2D SDS-PAGE) and high performance differential in gel electrophoresis (DIGE) - <https://eertis.eu/ersv-2200-000s-5757>
38. Western blotting - <https://eertis.eu/ersv-2200-000d-5760>
39. Ultracentrifugation - <https://eertis.eu/ersv-2200-000k-5763>
40. Nucleic acid extraction, purification and quantitation - <https://eertis.eu/ersv-2200-000r-5766>
41. Protein extraction, purification and quantitation - <https://eertis.eu/ersv-2200-000x-5769>
42. Histology - <https://eertis.eu/ersv-2200-000j-5772>

43. Cell cultures and hybridomas based monoclonal antibody production - <https://eertis.eu/ersv-2200-000q-5775>
44. Optical microscopy - <https://eertis.eu/ersv-2200-000w-5778>
45. ELISA - <https://eertis.eu/ersv-2200-000h-5781>
46. Gene expression analysis - <https://eertis.eu/ersv-2200-000g-5814>
47. Fluorescence microscopy analysis - <https://eertis.eu/ersv-2200-000a-5811>
48. Seahorse system analysis - <https://eertis.eu/ersv-2200-000p-5808>
49. Flow cytometry analysis, <https://eertis.eu/ersv-2200-000h-5805>
50. Cell sorting - <https://eertis.eu/ersv-2200-000b-5802>
51. Biocompatibility studies - <https://eertis.eu/ersv-2200-000a-5799>
52. Technical assistance in sectioning at the vybratom - <https://eertis.eu/ersv-2200-000u-5796>
53. Technical assistance in imaging assays - <https://eertis.eu/ersv-2200-000n-5793>
54. Technical assistance in xCELLigence system - <https://eertis.eu/ersv-2200-000g-5790>
55. Technical assistance in confocal microscopy examination and sample preparation - <https://eertis.eu/ersv-2200-000v-5787>
56. Training in cell culture - <https://eertis.eu/ersv-2200-000p-5784>

Listă rapoarte/studii de interes public sau cu beneficiari privați

1. Model experimental 'in vitro' de cardiomiocite hipertrofice. / IBPC-NS
2. Model experimental animal de ateroscleroza. / IBPC-NS
3. Dezvoltarea de bionanotehnologii bazate pe vezicule extracelulare – care consta in izolarea si caracterizarea veziculelor extracelulare (microvezicule si exozomi) din sange periferic uman utilizand microscopia electronica. / IBPC-NS
4. Dezvoltarea de biotehnologii bazate pe celule stem – care consta in izolarea si caracterizarea celulelor stem mezenchimale din maduva osoasa (MSC), sau din tesutul adipos subcutan (ADSC) utilizand tehnica citometriei in flux. / IBPC-NS
5. Dezvoltarea de bionanotehnologii bazate pe vezicule extracelulare – care consta in izolarea si caracterizarea veziculelor extracelulare (microvezicule si exozomi) provenite de la celulele stem mezenchimale din maduva osoasa (MSC), sau din tesutul adipos subcutan (ADSC)

utilizand aparatul Zetasizer Nano ZS (Malvern Instruments, Malvern, UK) si tehnica citometriei in flux. / IBPC-NS

6. Procedeu de obtinere a unor vezicule extracelulare modificate (incapsulate) genetic. / IBPC-NS

7. Procedura 'in vivo' pentru urmarirea biodistributiei veziculelor extracelulare. / IBPC-NS

8. Metode 'in vivo' pentru validarea veziculelor extracelulare ca strategii terapeutice. / IBPC-NS

9. Cloud Informatic

<https://onedrive.live.com/?authkey=%21ApgpVWIK%5FvVymYc&id=34DF5A3D6499FBF3%21734&cid=34DF5A3D6499FBF3>). 2020 / IBPC-NS