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Research interests

One of the research fields involves studies on the tumor-associated fibroblasts (TAFs), which have an established biological impact on tumorigenesis due to their role as matrix synthesizing or matrix degrading cells, contractile cells (a-SMA expression), and even blood vessel associated cells (VEGF secretion). Furthermore, our group has recently provided compelling evidence to support the origin of TAFs from bone marrow mesenchymal stem cells (MSCs), which can be recruited to tumor site, where they proliferate and acquire a TAF-like phenotype (Paunescu et al., J Cell Mol Med, 2011). Being genetically more stable than the frequently mutating, heterogeneous tumor cell populations, the expression of the TAF antigen will remain more constant and serve as a reliable target for cytotoxic, tumor-fighting lymphocytes, selected with Streptamer technology from the patient's own cells. The approach focused on TAFs' promises to fulfill the criteria of personalized medicine, while at the same time lowers the costs of therapy by standardizing a protocol to be applied for all types of solid tumors.
Another research is focused on understanding the pathological processes induced in Alzheimer disease-associated immunosenescence. Numerous mechanisms are investigated: significance of telomeres and telomerase, and the interplay between different cellular subpopulations, in the process of the immune system aging; programmed cell death (apoptosis), cell viability and survival, and also the study of the RNA interference phenomenon; understanding of dendritic cells' antigenic cross-presentation and efficient cross-priming of cytotoxic T cells.
For more information, please visit: www.taf-research.ro, www.biothera.ro

Relevant publications

1. Anastasiu MD, Cean A, **Bojin MF**, Gluhovschi A, Panaitescu C, Paunescu V, Tanasie G. Explants-isolated human placenta and umbilical cord cells share characteristics of both epithelial and mesenchymal stem cells. *Rom J Morphol Embryol,* 2016; 57(2): 3-6.
2. Tatu CS, Groza SS, Tatu FR, **Bojin MF**, Marusciac L, Gavriliuc OI, Hurmuz M, Cean A, Paunescu V, Tanasie G. In vivo Functional Studies of Human Adult Mesenchymal Stem Cells Migration towards Inflammatory Lesions after Transfection with CD29 Specific siRNA in Mouse Models. *Romanian Biotechnological Letters*, 2015; 20(6): 11057-66.
3. Tatu RF, Anusca DN, Groza SS, Marusciac L, **Bojin FM**, Tatu C, Hurmuz M, Paunescu V. Morphological and functional characterization of femoral head drilling-derived mesenchymal stem cells. *Rom J Morphol Embryol*. 2014; 55(4): 1415-22.
4. Paunescu V, **Bojin FM**, Gavriliuc OI, Taculescu EA, Ianos R, Ordodi VL, Iman VF, Tatu CA. Enucleation: a possible mechanism of cancer cell death. *J Cell Mol Med.* 2014; 18(6): 962-5.
5. Tatu CS, **Bojin FM**, Gruia AT, Ordodi VI, Mic FA, Iman V, Cean A, Gavriliuc OI, Paunescu V. Features of Lipid Metabolism along Differentiation Pathway of Human Mesenchymal Stem Cells towards Mature Adipocytes.

Romanian Biotechnological Letters, 2014; 19(2): 9257-71.

6. Soica C, Dehelean C, Danciu C, Wang HM, Wenz G, Ambrus R, **Bojin F**, Anghel M. Betulin complex in γ-cyclodextrin derivatives: properties and antineoplasic activities in in vitro and in vivo tumor models. *Int. J. Mol. Sci*. 2012; 13(11): 14992-15011.
7. **Bojin FM**, Gruita AT, Cristea MI, Ordodi VL, Paunescu V, Mic FA. Adipocytes differentiated in vitro from rat mesenchymal stem cells lack essential free fatty acids compared to adult adipocytes. *Stem Cells and Development*. 2012; 21(4): 507-12.
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9. Paunescu V, **Bojin FM**, Tatu CA, Gavriliuc OI, Rosca A, Gruia AT, Tanasie G, Bunu C, Crisnic D, Gherghiceanu M, Tatu FR, Tatu CS, Vermesan S. Tumour-associated fibroblasts and mesenchymal stem cells: more similarities than differences. *J Cell Mol Med*., 2011; 15(3):635-646.
10. **Bojin F**, Ordodi V, Anghel S, Gruia A, Gavriliuc O, Georgescu R, Vintila R, Tatu C, Bunu C, Tatu CA, Tanasie G, Paunescu V. Mesenchymal stem cells admix with biological scaffold heal bone defects in rat model. *Romanian Biotechnological Letters*, 2011; 16(3): 6218-6225.

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