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Research interests

Stem cell biology is the main focus of my research, especially adult mesenchymal stem cells, of both human and animal origin. Our studies included characterization of these cells, from immunophenotypal assays to secretory profile testing, thus providing evidences that adult mesenchymal stem cells (MSCs) are very attractive candidates for regenerative medicine. Further differentiation assays suggested that MSCs can be successfully transformed *in vitro* into adipocytes, osteoblasts and chondrocytes, under appropriated culture conditions. Research continued with studies on adipocytes and composition of free fatty acids in MSCs-induced adipocytes compared to native adipose tissue, and we proved that MSCs-differentiated adipocytes lack essential FFA, which makes them dysfunctional from the metabolic point of view.

Another research field involves studies on the tumor-associated fibroblasts (TAFs), which have an established biological impact on tumorigenesis; 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.

Relevant publications

1. DM Minca, D Puscasiu, S Brad, **CS Tatu**, Effect of Magnegita on Routine Laboratory Parameters in Patients with Impaired Kidney or Liver Function, *Rev Roum Chim*, 2016, 67(4), 808-812
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5. RF Tatu, D Anuşca, S Groza, L Marusciac, F Bojin, **C Tatu**, M Hurmuz, V Păunescu, Morphological and functional characterization of femoral head drilling-derived mesenchymal stem cells, *Rom J Morphol Embryol*, 2014, 55(4):1415–1422
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10. Paunescu V, Bojin FM, Tatu CA, Gavriiuc 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
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Affiliations

- “Victor Babes” University of Medicine and Pharmacy Timisoara
- OncoGen – Center for Gene and Cellular Therapies in the Treatment of Cancer
- Romanian Society of Physiological Science
- Federation of European Physiological Society (FEPS)
- Romanian Society of Immunology
- International Federation of Cell Biology
- Romanian Society of Cell Biology