

# Cell science 2017: Bone marrow mesenchymal stem cells differentially affect the aggressiveness of cancer cell subtypes\_ Tamara Lah Turnsek\_ Proffesor, Inc,USA

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## Abstract

The most aggressive brain tumour glioblastoma multiforme is characterized by aggressive Glioblastoma (GBM) cell infiltration into surrounding brain parenchyma. We hypothesise that this invasion process is supported by Mesenchymal Stem Cells (MSCs), comprising GBM microenvironment. MSCs are recruited from bone marrow or endogenous brain tissue to the GBM tumour, but their interactions with GBM cells are still poorly understood. To elucidate the direct interaction between bone marrow-derived MSCs and two distinct GBM cell lines, U87 and U373, we tested cells' invasion in vitro, as well as in vivo, using zebrafish embryo model. Since proteases are crucial for GBM cell invasion, we focused on their role in invasion of cells in MSC/GBM direct co-cultures by analysing their expression at gene and protein levels and by applying selective protease inhibitors in the 3D-invasion model in vitro. We demonstrated that the effect of MSC/GBM cellular cross-talk on GBM cell invasion is GBM cell type specific. Namely, MSCs decreased the invasion of U87 cells, whereas they increased the invasion of U373 cells in vitro and in vivo. In contrast, both GBM cell lines increased the invasiveness of MSCs upon direct interactions.

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## Biography

Tamara Lah Turnsek, from the Microbiology Department of "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania. She is coordinating PhD doctor's thesis in

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