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## Galectin-1-exposed dermal and tumor-associated fibroblasts produce biologically active extracellular matrix which improves growth of endothelial cells *in vitro*

Lenka Varinska<sup>1</sup>, Vlasta Perzel'ova<sup>1</sup>, Barbora Dvorankova<sup>2</sup>, Jan Mojzis<sup>1</sup>, Sabine Andre<sup>3</sup>, Herbert Kaltner<sup>3</sup>, Hans-Joachim Gabius<sup>3</sup>, Karel Smetana Jr.<sup>2</sup> and Peter Gal<sup>1, 2, 4</sup> <sup>1</sup>Pavol Jozef Safarik University, Slovak Republic <sup>2</sup>Charles University, Careb Pavol Joz

<sup>2</sup>Charles University, Czech Republic <sup>3</sup>Ludwig-Maximilians University, Germany

<sup>4</sup>East-Slovak Institute of Cardiovascular Diseases Inc., Slovak Republic

The tumor microenvironment is formed by both malignant and non-malignant cells as well as by extracellular matrix (ECM) components. Stromal cells located in the tumor are primarily considered as sources of promalignant factors. Toward this end, we here address the issue of testing whether ECM affects vessel growth, considering the impact of a potent effector for conversion of fibroblasts to myofibroblasts and ECM production, i.e. the adhesion/growth-regulatory galectin-1. This endogenous lectin, known for triggering diverse cellular responses such as growth modulation, invasion or motility and production of vascular endothelial growth factor-C, is here studied for its impact on the qualities of ECM to sustain proliferation of human umbilical vein endothelial cells (HUVECs). Fibroblasts had been cultured for 10 days with the lectin, followed by removing cellular constituents after an osmotic shock. Freshly isolated HUVECs were placed on the ECM. In parallel, HUVECs were seeded on untreated and gelatin-coated surfaces as controls. A positive control for growth of HUVECs culture using medium supplemented with vascular endothelial growth factor completed the test panel. Cells were kept in contact to the substratum for two days and then processed for immunocytochemistry. HUVECs seeded on fibroblast-generated ECM presented a comparatively high degree of proliferation. Furthermore, contact to substratum produced by tumor-associated fibroblasts led to generation a meshwork especially rich in fibronectin. Galetctin-1 is apparently capable to trigger ECM production favorable for growth of HUVECs, prompting further work on characterizing structural features of the ECM and in situ correlation of lectin presence, ECM constitution and neo-angiogenesis.

## **Biography**

Lenka Varinska has completed her PhD from Pavol Jozef Safarik University in Kosice, Slovak Republic. She is the Postdoctoral Researcher at the Department of Pharmacology, Faculty of Medicine, Kosice, Slovak Republic. She has published more than 19 papers in reputed journals.

lenkavarinska@yahoo.com

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