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Identification and characterization of proteoglycans in early stages of fibrosis

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Fibrosis is a pathological process characterized by the production of excessive amount of connective tissue and deregulated extracellular matrix (ECM) production results in scarring and thickening of the tissue. ECMs secrete molecules that determine the cell microenvironment and are composed of a dynamic glycoproteins, collagens and proteoglycans (PGs). Proteoglycans are a key component of extracellular matrix, filling the space between the fibrous proteins. They modulate cell migration, cellular adhesion and proliferation. Proteoglycans have significant functional and structural roles in fibrosis. Aim of this study is showing role of proteoglycans in the early stages of fibrotic process. To investigate it, we used endothelial cells enriched in Snail. This model was obtained in two different ways: Human microvascular endothelial cell (HMEC-1) was stimulated with profibrotic transforming growth factor-β1 (TGF-β1) or was transfected with transcription factor: Snail. This study describes changes in the proteoglycans deposition in fibrosis. We determined the *in vitro* regulation of proteoglycans, such as: Lumican, versican, fibromodulin in response to TGF-β1 in HMEC-1 and in cells with Snail overexpressing. The investigation the role of proteoglycans in fibrosis could offer new insights in the pathogenesis of this disease.

Biography

Katarzyna Gawrys obtained Bachelor's degree in Medical Biotechnology at Medical University of Silesia in 2010 and a Master's degree in Medical Biotechnology at Jagiellonian University in Kraków, Poland in 2012. She held numerous practices in research units and has participated in many conferences and specialized trainings. She currently works at Medical University of Lodz, Department of Cytobiology and Proteomics.

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