

JOINT EVENT

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Human metaplastic breast carcinoma and decorin

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Decorin is a central extracellular matrix (ECM) proteoglycan known for its oncosuppressive activity. In various types of cancer, including breast cancer, decorin's expression in the tumor microenvironment has been reported to be markedly decreased. Furthermore, its reduced expression has been shown to be associated with poorer outcome in invasive breast cancer. Metaplastic breast carcinoma (MBC) is a rare subtype of invasive breast cancer and has poor prognosis. In general, cancers are heterogeneous cellular masses comprised of different cell types and their ECM. However, in MBC little is known about the composition of ECM and its constituents. The aim of our study is to explore decorin immunoreactivity and the effect of adenoviral decorin cDNA (Ad-DCN) transduction in MBC. Methods included multiple immunohistochemical stainings to characterize the massive breast tumour. To explore the effect of Ad-DCN transduction on the tumor tissue, three-dimensional (3D) explant cultures derived from the tumour are transduced with the modified adenovirus. The immunohistochemistry results showed that MBC tumour was completely negative for decorin demonstrating that the malignant cells were not able to synthesize decorin. Furthermore, Ad-DCN transduction resulted in a markedly inhibited cell proliferation and altered cytological phenotype of MBC explants by decreasing the amount of atypical cells. The results of our study favor the development of novel adjuvant therapies based on decorin. Noteworthy is also the idea of "normalization of the tumour microenvironment" whereby decorin in its part could orchestrate cancer cells towards a less malignant phenotype.

Biography

Annele Sainio obtained her Master of Science Degree in Genetics in the Department of Biology at the University of Turku (Finland), and defended her thesis "The role of extracellular matrix macromolecules in cancer and diabetic macroangiopathy - with special reference to decorin and hyaluronan" in the spring 2016 respectively. Currently, she works as a Postdoc in the Department of Medical Biochemistry and Genetics at the same university. Her research is focused on specific extracellular matrix macromolecules, particularly proteoglycans and hyaluronan in various disease processes such as tumorigenesis. She has published more than 15 papers in reputed journals.

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