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Modulation of HeLa growth and proliferation by breast carcinoma secreted non-cellular microenvironment

Nilesh Kumar Sharma, Himadri Patel and Devashree Jahagirdar Dr. D Y Patil Biotechnology & Bioinformatics Institute, Pune, India

The tumor tissue microenvironment plays an important role in development and regulation of normal and tumor or neoplastic cells and in essence support the cancer to be depicted as heterogenous complex diseases. Within the heterogenous nature of tumor microenvironment, several cellular and non-cellular factors have been reported to drive cancer development, invasion, metastasis and drug resistance debacles. Here, authors have attempted to understand the crosstalk between non-cellular components from breast cancer cell MCF-7 towards cervical cancer cell HeLa growth and proliferation. In this paper, authors have selected breast carcinoma cell MCF-7 and clinical tissue samples as a source of non-cellular microenvironment factors. Further, these non-cellular components from breast cancer cells is evaluated for their growth and proliferation inhibitor role upon HeLa using growth, viability and apoptosis assays. The current findings lead us to suggest that the microenvironment secreted from MCF-7 and breast carcinoma tissue can play an interference role in growth and viability of HeLa during in vitro assessment. Here, preliminary data strongly indicate that non-cellular secreted components are able to bring apoptosis induced cell death of HeLa, which resulted into loss of cell viability. This observation is a novel of this kind, where cells and tissue samples from one carcinoma such as breast carcinoma could be implicated in the modulation of another carcinoma cell line HeLa for its growth and death process. However, this findings need to be tested in other cell lines and molecular mechanisms and detection of non-cellular microenvironment secret.

nilesh.sharma@dpu.edu.in