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Poster Presentation

Periostin Recruits Tumor Associated Macrophages in Glioblastoma Multiform

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Abstract

Glioblastoma multiform (GBM) is the most common and lethal type of primary brain tumors with high rates of morbidity and mortality. Treatment options are limited and ineffective in most of the cases. Epidemiological studies have shown a link between inflammation and glioma genesis. In addition, at the molecular level, pro-inflammatory cytokines released from activated microglia can increase proliferation of Glioma stem cells (GSCs) and migration of these cells to the inflamed area. GSCs increase tumor progression and decrease survival with several different mechanisms. One of the genes expressed in GSCs is POSTN. The product of this gene is a matricellular protein named periostin which has a critical role in carcinoma metastasis. This protein is up regulated in glioblastoma. A common feature of GBMs is abundant macrophage infiltration. Tumor-associated macrophages (TAM) have been shown to promote cancer cell proliferation, neo-vascularization and interfere with the anti-tumor functions of other immune cells. TAM density correlates with POSTN levels in human GBMs. POSTN causes an increase in cancer cell proliferation, invasion, TAM recruitment, and angiogenesis. As a result, it can be said that POSTN gene expression promotes GBM progression and it is possible to improve GBM by targeting POSTN gene.

Keywords: Glioblastoma Multiform, Inflammation, Glioma Stem Cells, POSTN, Tumor Associated Macrophages

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