Pentraxin 3 (PTX3) is an inflammatory molecule that is involved in immune responses, inflammation, and cancer. Recent evidence suggests that PTX3 plays a critical role in tumor progression; however, its impact on the biological function of gliomas remains unknown.

In a study, immunohistochemical staining showed that patients with high-grade gliomas exhibited increased expression levels of PTX3 compared to those with low-grade gliomas ($P < 0.001$). Furthermore, knockdown of PTX3 in GBM8401 cells inhibits proliferation, increases p21 protein levels, and decreases cyclin D1 protein levels, resulting in cell cycle arrest at the G0/G1 phase. In addition, knockdown of PTX3 significantly decreases GBM8401 cell migration and invasion through the downregulation of matrix metalloproteinase-1 and -2 (MMP-1 and MMP-2) expression. In a GBM8401 xenograft animal model, PTX3 knockdown decreases tumor growth in vivo. In conclusion, PTX3 plays an important role in glioma cell proliferation and invasion, and may thus serve as a novel potential therapeutic target in the treatment of gliomas. [1].

1)
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