FAM129A

FAM129A (Family with sequence similarity 129, member A) is a protein-coding gene that is located on chromosome 4 in humans. The protein encoded by this gene is a member of the FAM129 family, which is involved in various cellular processes such as cell proliferation, differentiation, and apoptosis.

The exact function of FAM129A is not fully understood, but it has been shown to interact with multiple signaling pathways, including the Wnt signaling pathway, which is involved in embryonic development and tissue regeneration. FAM129A has also been implicated in cancer, as its expression levels have been found to be altered in various types of tumors, and it may play a role in regulating cell growth and survival.

Research on FAM129A is ongoing, and more studies are needed to fully understand its role in cellular processes and its potential as a therapeutic target in various diseases.

Glioma stem cells (GSCs) are a subpopulation of tumor cells with self-renewal and tumorigenic capabilities in glioblastomas (GBMs). Diffuse infiltration of GSCs facilitates tumor progression and frustrates efforts at effective treatment. Further compounding this situation is the currently limited understanding of what drives the GSC invasion.

Liu et al. comprehensively evaluated the significance of a novel invasion-related protein, Family with Sequence Similarity 129 Member A (FAM129A), in infiltrative GSCs.

Methods: Western blotting, immunohistochemistry, and gene expression analysis were used to quantify FAM129A in glioma specimens and cancer datasets. Overexpression and knockdown of FAM129A in glioma stem cells were used to investigate its effects on tumor growth and invasion. RNA-seq, qRT-PCR, western blotting, and co-precipitation assays were used to investigate FAM129A signaling mechanisms.

Results: FAM129A is preferentially expressed in invasive frontiers. Targeting FAM129A impairs GSC invasion and self-renewal. Mechanistically, FAM129A acted as a positive regulator of Notch signaling by binding with the Notch1 intracellular domain (NICD1) and preventing its degradation.

FAM129A and NICD1 provide a precise indicator for identifying tumor margins and aiding prognosis. Targeting them may provide a significant therapeutic strategy for GSCs [1)]

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Liu G, Zhang P, Chen S, Chen Z, Qiu Y, Peng P, Huang W, Cheng F, Zhang Y, Li H, Xiao Q, Mao F, Wang B, Jiang X, Wan F, Guo D, Yu X. FAM129A promotes self-renewal and maintains invasive status via stabilizing the Notch intracellular domain in glioma stem cells. Neuro Oncol. 2023 Apr 21:noad079. doi: 10.1093/neuonc/noad079. Epub ahead of print. PMID: 37083136.