ADAM-15, or a disintegrin and metalloproteinase 15, is a member of the ADAM family of proteins that are involved in cell signaling, adhesion, and proteolysis. ADAM-15 is a transmembrane protein that is expressed in various tissues, including the brain, heart, lungs, and kidneys.

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Research has implicated ADAM-15 in various biological processes, including cell proliferation, migration, and invasion. ADAM-15 has also been suggested to play a role in the development and progression of various diseases, including cancer, cardiovascular disease, and inflammatory disorders.

In cancer, ADAM-15 has been shown to promote tumor growth, angiogebnesis, and metastasis. ADAM-15 has also been suggested as a potential therapeutic target for cancer treatment. In cardiovascular disease, ADAM-15 has been implicated in the regulation of vascular smooth muscle cell function and the development of atherosclerosis. In inflammatory disorders, ADAM-15 has been suggested to play a role in the regulation of immune cell function and the development of autoimmune diseases.

Further research is needed to fully understand the role of ADAM-15 in various biological processes and diseases. However, the diverse functions of ADAM-15 and its potential as a therapeutic target make it an interesting target for future research.

The purpose of a study by Piperi et al. was to investigate the clinical significance of SSADH expression in human gliomas. Using public single-cell RNA-sequencing data from glioma surgical resections, Piperi et al. initially grouped cancer cells according to ALDH5A1 (Aldehyde dehydrogenase 5 family member A1) expression, which encodes SSADH. Gene ontology enrichment analysis of genes differentially expressed between cancer cells expressing high or low levels of ALDH5A1, highlighted enrichment in genes implicated in the cell morphogenesis and motility. In glioblastoma cell lines, ALDH5A1 knockdown inhibited cell proliferation, induced apoptosis, and reduced their migratory potential. This was accompanied by a reduction in the mRNA levels of the adherens junction molecule ADAM-15 and deregulation in the expression of EMT biomarkers, with increased CDH1 and decreased vimentin mRNA levels. Evaluation of SSADH expression was significantly elevated in cancer tissues compared to normal brain tissues, without any significant correlation with clinicopathological characteristics. In summary, data show that SSADH is upregulated in glioma irrespective of the histological grade, and its expression sustains glioma cell motility <sup>1)</sup>

## 1)

Piperi C, Saurty-Seerunghen MS, Levidou G, Sepsa A, Trigka EA, Klonou A, Markouli M, Strepkos D, Spyropoulou A, Kanakoglou DS, Lakiotaki E, Karatrasoglou EA, Boviatsis E, El-Habr EA, Korkolopoulou P. Glioma Cells Expressing High Levels of ALDH5A1 Exhibit Enhanced Migration Transcriptional Signature in Patient Tumors. Neurotherapeutics. 2023 Mar 28. doi: 10.1007/s13311-023-01354-8. Epub ahead of print. PMID: 36976494.

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