IGF2BP2

Insulin-like growth factor 2 mRNA-binding protein 2 is a protein that in humans is encoded by the IGF2BP2 gene.

This gene encodes a member of the IGF-II mRNA-binding protein (IMP) family. The protein encoded by this gene contains several four KH domains and two RRM domains. It functions by binding to the 5' UTR of the insulin-like growth factor 2 (IGF2) mRNA and regulating IGF2 translation. Alternate transcriptional splice variants, encoding different isoforms, have been characterized.

Accumulating evidence revealed that IGF2BP2 mediates the pathogenesis of Type 2 diabetes mellitus and cancer by regulating glucose metabolism, insulin sensitivity, and tumorigenesis. A review provides insight into the potential involvement of this RNA-binding protein in the link between Type 2 diabetes mellitus and cancer [1].

Insulin-like growth factor 2 mRNA-binding protein 2 (Imp2) is known to be upregulated in many cancers and is known to regulate the signaling activity of insulin-like growth factor 2 (IGF2). However, relatively little is known about its role in malignant development of glioblastoma multiforme Glioblastoma. Mu et al. first found Imp2 is upregulated in Glioblastoma tissues by using clinical samples and public database search. Studies with loss and gain of Imp2 expression in in vitro Glioblastoma cell culture system demonstrated the role of Imp2 in promoting Glioblastoma cell proliferation, migration, invasion and epithelial-to-mesenchymal transition (EMT). Additionally, the results show that Imp2 regulates the activity of IGF2, which further activates PI3K/Akt signaling, thereby to promote Glioblastoma malignancy. Inhibition of Imp2 was also found to sensitize Glioblastoma to temozolomide treatment. These observations add to the current knowledge of Glioblastoma biology, and may prove useful in development of more effective Glioblastoma therapy [2]

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Cao J, Yan W, Ma X, Huang H, Yan H. Insulin-like growth factor 2 mRNA-binding protein 2 - a potential link between type 2 diabetes mellitus and cancer. J Clin Endocrinol Metab. 2021 Jun 1:dgab391. doi: 10.1210/clinem/dgab391. Epub ahead of print. PMID: 34061963.

2)
Mu Q, Wang L, Yu F, Gao H, Lei T, Li P, Liu P, Zheng X, Hu X, Chen Y, Jiang Z, Sayari AJ, Shen J, Huang H. Imp2 Regulates Glioblastoma Progression by Activating IGF2/PI3K/Akt pathway. Cancer Biol Ther. 2015 Feb 26:0. [Epub ahead of print] PubMed PMID: 25719943.