LITAF

Lipopolysaccharide-induced tumor necrosis factor-alpha factor is a protein that in humans is encoded by the LITAF gene. It is associated with Charcot–Marie–Tooth disease 1C.

Yu et al. found that LITAF, is up-regulated both in mRNA and protein in GBM tumors. Meanwhile, theye observed that high LITAF expression contributes to glioblastoma radioresistance cell lines (including U87, U251, DK, and AM-38 cell lines), indicated by knockout or knockdown of LITAF in cells sensitizing them to radiation treatment both in vitro and in vivo. Furthermore, they demonstrated that kavain, an active constituent of Piper methysticum Forst., effectively ablates GSC-like cells' (such as CD133 + U87, U251, DK, and AM38 populations) radioresistance in a LITAF-dependent manner.

In mechanism, the results indicated that 1) the elevation of LITAF in GBM cells activates the NF-κB pathway to promote mesenchymal transition, and 2) kavain disturbs STAT6B/LITAF protein interaction and then expels LITAF from the nucleus. Therefore, they considered that kavain may be a potential candidate to develop an irradiation therapy adjuvant for GBM [1)]

1)
Yu J, Shi J, Yuan F, Yin W, Zeng H, Ge L, Li H, Wang X. Kavain ablates the radio-resistance of IDH-wildtype glioblastoma by targeting LITAF/NF-κB pathway. Cell Oncol (Dordr). 2022 Dec 5. doi: 10.1007/s13402-022-00743-z. Epub ahead of print. PMID: 36464713.