Krueppel-like factor 6 is a protein that in humans is encoded by the KLF6 gene.

It is a tumor suppressor gene.

Dysregulation of the nuclear factor kappa (NF-κB) transcription factor occurs in many cancer types. Krüppel-like family of transcription factors (KLFs) regulate the expression of genes involved in cell proliferation, differentiation and survival.

Masilamani et al., report a new mechanism of NF-κB activation in glioblastoma through depletion of the KLF6 tumor suppressor. They show that KLF6 transactivates multiple genes negatively controlling the NF-κB pathway and consequently reduces NF-κB nuclear localization and downregulates NF-κB targets. Reconstitution of KLF6 attenuates their malignant phenotype and induces neural-like differentiation and senescence, consistent with NF-κB pathway inhibition. KLF6 is heterozygously deleted in 74.5% of the analyzed glioblastomas and predicts unfavorable patient prognosis suggesting that haploinsufficiency is a clinically relevant means of evading KLF6-dependent regulation of NF-κB. Together, the study identifies a new mechanism by which KLF6 regulates NF-κB signaling, and how this mechanism is circumvented in glioblastoma through KLF6 loss [1].

1)
Masilamani AP, Ferrarese R, Kling E, Thudi NK, Kim H, Scholtens DM, Dai F, Hadler M, Unterkircher T, Platania L, Weyerbrock A, Prinz M, Gillespie GY, Harsh Iv GR, Bredel M, Carro MS. KLF6 depletion promotes NF-κB signaling in glioblastoma. Oncogene. 2017 Feb 6. doi: 10.1038/onc.2016.507. [Epub ahead of print] PubMed PMID: 28166199.