SETDB1

This gene encodes a histone methyltransferase which regulates histone methylation, gene silencing, and transcriptional repression. This gene has been identified as a target for treatment in Huntington Disease, given that gene silencing and transcription dysfunction likely play a role in the disease pathogenesis. Alternatively spliced transcript variants of this gene have been described.

A research clarified that SETDB1 regulates of tumor microenvironment and hence presents a potential therapeutic target for glioblastoma treatment [1)]

This article was retracted [2)]

OLIG2-SETDB1 complex can mediate transcriptional repression in oligodendrocytes progenitor cells, affecting myelination [3)].

A study suggests that the PELP1/SETDB1 axis play an important role in aberrant Akt activation and serves as a novel target for treating endocrine therapy resistance in breast cancer [4)].

1)
Han S, Zhen W, Guo T, Zou J, Li F. SETDB1 promotes glioblastoma growth via CSF-1-dependent macrophage recruitment by activating the AKT/mTOR signaling pathway. J Exp Clin Cancer Res. 2020 Oct 15;39(1):218. doi: 10.1186/s13046-020-01730-8. Retraction in: J Exp Clin Cancer Res. 2022 Sep 21;41(1):280. PMID: 33059737; PMCID: PMC7560339.
2)
Han S, Zhen W, Guo T, Zou J, Li F. Retraction Note: SETDB1 promotes glioblastoma growth via CSF-1-dependent macrophage recruitment by activating the AKT/mTOR signaling pathway. J Exp Clin Cancer Res. 2022 Sep 21;41(1):280. doi: 10.1186/s13046-022-02495-y. PMID: 36127733.
3)
Zhang K, Chen S, Yang Q, Guo S, Chen Q, Liu Z, Li L, Jiang M, Li H, Hu J, Pan X, Deng W, Xiao N, Wang B, Wang ZX, Zhang L, Mo W. The Oligodendrocyte Transcription Factor 2 OLIG2 regulates transcriptional repression during myelinogenesis in rodents. Nat Commun. 2022 Mar 17;13(1):1423. doi: 10.1038/s41467-022-29068-z. Erratum in: Nat Commun. 2022 Jun 1;13(1):3164. PMID: 35301318; PMCID: PMC8931116.
4)
Liu Z, Liu J, Ebrahimi B, Pratap UP, He Y, Altwegg KA, Tang W, Li X, Lai Z, Chen Y, Shen L, Sareddy GR, Viswanadhapalli S, Tekmal RR, Rao MK, Vadlamudi RK. SETDB1 interactions with PELP1 contributes to breast cancer endocrine therapy resistance. Breast Cancer Res. 2022 Apr 8;24(1):26. doi: 10.1186/s13058-022-01520-4. PMID: 35395812; PMCID: PMC8991965.