

NOTCH1

NOTCH1 is one of four known [genes](#) encoding the [NOTCH](#) family of [Notch proteins](#), a group of [receptors](#) involved in the [Notch signaling pathway](#).

A study indicates that [VGLL4](#) is a key player in the mediation of NOTCH1-dependent HIF1 α -regulated erythropoiesis and can be sensitively regulated by oxygen concentrations. On the other hand, VGLL4 is a pivotal regulator of heme biosynthesis and erythroid terminal differentiation, which collectively improve oxygen metabolism ¹⁾.

Kahn et al. identified a mechanism in which [NOTCH1](#) activates [BMI1](#) through the activation of [TWIST1](#). NOTCH1 expression and activity are directly related to medulloblastoma metastasis and decreased survival rate of tumor-bearing mice ²⁾.

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Wang Y, Liu X, Xie B, Yuan H, Zhang Y, Zhu J. The NOTCH1-dependent HIF1 α /VGLL4/IRF2BP2 oxygen sensing pathway triggers erythropoiesis terminal differentiation. Redox Biol. 2019 Sep 2;28:101313. doi: 10.1016/j.redox.2019.101313. [Epub ahead of print] PubMed PMID: 31539803.

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Kahn SA, Wang X, Nitta RT, Gholamin S, Theruvath J, Hutter G, Azad TD, Wadi L, Bolin S, Ramaswamy V, Esparza R, Liu KW, Edwards M, Swartling FJ, Sahoo D, Li G, Wechsler-Reya RJ, Reimand J, Cho YJ, Taylor MD, Weissman IL, Mitra SS, Cheshier SH. Notch1 regulates the initiation of metastasis and self-renewal of Group 3 medulloblastoma. Nat Commun. 2018 Oct 8;9(1):4121. doi: 10.1038/s41467-018-06564-9. Erratum in: Nat Commun. 2018 Nov 2;9(1):4651. PMID: 30297829; PMCID: PMC6175869.

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