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EZH2 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2512c

Product Information

Application	WB, IHC-P, E
Primary Accession	Q15910
Other Accession	Q61188, Q4R381, Q4V863, Q98SM3
Reactivity	Human, Rat, Mouse
Predicted	Xenopus, Monkey, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB2921
Calculated MW	85363

Additional Information

Gene ID	2146
Other Names	Histone-lysine N-methyltransferase EZH2, ENX-1, Enhancer of zeste homolog 2, Lysine N-methyltransferase 6, EZH2, KMT6
Target/Specificity	This EZH2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide selected from 410-440aa of human EZH2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	EZH2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	EZH2 (HGNC:3527)
Synonyms	KMT6
Function	Catalytic subunit of the PRC2/EED-EZH2 complex, a Polycomb group (PcG) complex that methylates 'Lys-9' (H3K9me) and 'Lys-27' (H3K27me) of histone

	H3, leading to transcriptional repression of the affected target gene (PubMed:14532106, PubMed:15225548, PubMed:15385962, PubMed:16618801, PubMed:16936726, PubMed:17344414, PubMed:22323599, PubMed:24474760, PubMed:26581166, PubMed:30026490, PubMed:30923826). Able to mono-, di- and trimethylate 'Lys-27' of histone H3 to form H3K27me1, H3K27me2 and H3K27me3, respectively (PubMed:15231737, PubMed:17210787, PubMed:18285464, PubMed:22323599, PubMed:30923826). Displays a preference for substrates with less methylation, loses activity when progressively more methyl groups are incorporated into H3K27, H3K27me0 > H3K27me1 > H3K27me2 (PubMed:22323599, PubMed:30923826). Compared to EZH1-containing complexes, it is more abundant in embryonic stem cells and plays a major role in forming H3K27me3, which is required for embryonic stem cell identity and proper differentiation (PubMed:19026781). The PRC2/EED-EZH2 complex may also serve as a recruiting platform for DNA methyltransferases, thereby linking two epigenetic repression systems (PubMed:16357870, PubMed:17200670). Genes repressed by the PRC2/EED- EZH2 complex include HOXC8, HOXA9, MYT1, CDKN2A and retinoic acid target genes (PubMed:16179254, PubMed:18086877, PubMed:20935635). EZH2 can also methylate non-histone proteins such as the transcription factor GATA4 and the nuclear receptor RORA (PubMed:23063525). Regulates the circadian clock via histone methylation at the promoter of the circadian genes (PubMed:16717091). Essential for the CRY1/2-mediated repression of the transcriptional activation of PER1/2 by the CLOCK- BMAL1 heterodimer; involved in the di and trimethylation of 'Lys-27' of histone H3 on PER1/2 promoters which is necessary for the CRY1/2 proteins to inhibit transcription (By similarity).
Cellular Location	Nucleus. Note=Localizes to the inactive X chromosome in trophoblast stem cells. {ECO:0000250|UniProtKB:Q61188}
Tissue Location	In the ovary, expressed in primordial follicles and oocytes and also in external follicle cells (at protein level) (PubMed:31451685). Expressed in many tissues (PubMed:14532106) Overexpressed in numerous tumor types including carcinomas of the breast, colon, larynx, lymphoma and testis (PubMed:14532106)

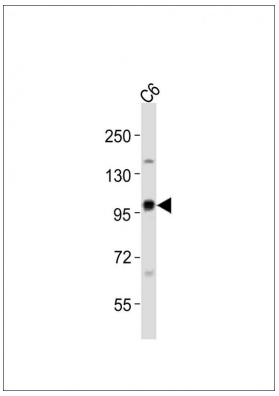
Background

EZH2, SUZ12, and EED form a complex that methylates nucleosomal histone H3 at Lys27. EZH2 contains a SET domain, a signature motif for all known histone lysine methyltransferases except the H3-K79 methyltransferase DOT1, and is therefore likely to be the catalytic subunit. Consequently, EZH2 is thought to regulate gene expression by controlling chromatin structure. Several lines of evidence suggested a critical role for the EZH2 protein during normal and perturbed development of the hematopoietic and central nervous systems. The EZH2 protein has been shown to associate with the VAV1 protooncoprotein and with the XNP protein, the product of a gene associated with mental retardation. Additionally, due to mapping of EZH2 to the 7q35-q36 chromosomal region associated with myeloid disorders, this protein is suggested to participate in the genetic events triggering myeloid leukemia.

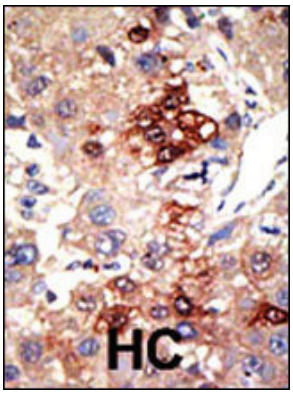
References

Cardoso, C., et al., Hum. Mol. Genet. 7(4):679-684 (1998).
Laible, G., et al., EMBO J. 16(11):3219-3232 (1997).
Hobert, O., et al., Mol. Cell. Biol. 16(6):3066-3073 (1996).
Chen, H., et al., Genomics 38(1):30-37 (1996).

Images



Anti-EZH2 Antibody (I418)at 1:1000 dilution + C6 whole cell lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 85 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Synergy of p53 and Rb deficiency in a conditional mouse model for metastatic prostate cancer.
- MicroRNA-144 suppresses tumorigenesis and tumor progression of astrocytoma by targeting EZH2.
- STAT3 signaling drives EZH2 transcriptional activation and mediates poor prognosis in gastric cancer.
- Inhibition of enhancer of zeste homolog 2 (EZH2) expression is associated with decreased tumor cell proliferation, migration, and invasion in endometrial cancer cell lines.

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