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EZH2 Antibody

Catalog # ASC11310

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q15910
Other Accession	AAH10858, 21361095
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	85363
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	EZH2 antibody can be used for detection of EZH2 by Western blot at 1 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	2146
Other Names	Histone-lysine N-methyltransferase EZH2, 2.1.1.43, ENX-1, Enhancer of zeste homolog 2, Lysine N-methyltransferase 6, EZH2, KMT6
Target/Specificity	EZH2; Multiple isoforms of EZH2 are known to exist. EZH2 antibody is predicted to not cross-react with EZH1.
Reconstitution & Storage	EZH2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	EZH2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	EZH2 (HGNC:3527)
Synonyms	KMT6
Function	Polycomb group (PcG) protein. Catalytic subunit of the PRC2/EED-EZH2 complex, which methylates 'Lys-9' (H3K9me) and 'Lys-27' (H3K27me) of histone H3, leading to transcriptional repression of the affected target gene. Able to mono-, di- and trimethylate 'Lys-27' of histone H3 to form H3K27me1, H3K27me2 and H3K27me3, respectively. 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. The PRC2/EED-EZH2 complex may also serve as a recruiting platform for DNA methyltransferases, thereby linking two epigenetic repression systems. Genes repressed by the PRC2/EED-EZH2 complex include HOXC8, HOXA9, MYT1, CDKN2A and retinoic acid target genes. EZH2 can also methylate non-histone proteins such as the transcription factor GATA4 and the nuclear receptor RORA. Regulates the circadian clock via histone methylation at the promoter of the circadian genes. 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.
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

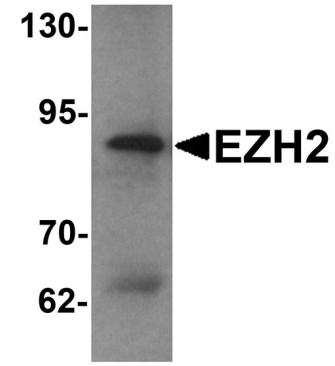
EZH2 Antibody: EZH2 was initially identified as a homolog of the drosophila Enhancer of Zeste through exon trap screening of chromosome 21. Both EZH2 and the related protein EZH1 can form complexes with the noncanonical Polycomb repressive complex-2 (PRC2) and maintain repressive chromatin, but the PRC2-EZH1 complex mediates methylation of histone H3. Both EZH1 and EZH2 are thought to function in the maintenance of embryonic stem cell pluripotency and plasticity and recently have been shown to be essential for hair follicle homeostasis and wound repair. Overexpression of EZH2 has been reported as a marker for advanced and metastatic cancers.

References

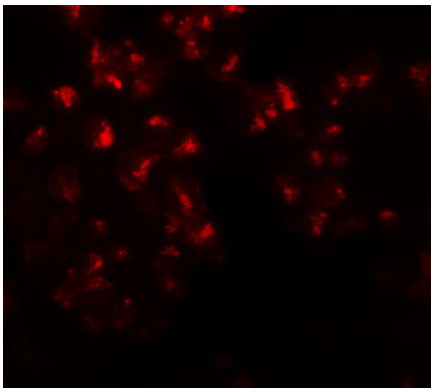
Chen H, Rossier C, and Antonarakis SE. Cloning of a human homolog of the Drosophila enhancer of zeste gene (EZH2) that maps to chromosome 21q22.2. Genomics 1996; 38:30-7
Margueron R, Li G, Sarma K, et al. Ezh1 and Ezh2 maintain repressive chromatin through different mechanisms. Mol. Cell 2008; 32:503-18.
Shen X, Liu Y, Hsu YJ, et al. EZH1 mediates methylation on histone H3 lysine 27 and complements EZH2 in maintaining stem cell identity and executing pluripotency. Mol. Cell 2008; 32:491-502.
Ezhkova E, Lien WH, Stokes N, et al. EZH1 and EZH2 cogovern histone H3K27 trimethylation and are essential for hair follicle homeostasis and wound repair. Genes Dev. 2011; 25:485-98.

Images

Western blot analysis of EZH2 in 293 cell lysate with EZH2 antibody at 1 µg/mL.



Immunocytochemistry of EZH2 in 293 cells with EZH2 antibody at 10 µg/mL.



Immunofluorescence of EZH2 in 293 cells with EZH2 antibody at 20 µg/mL.