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EZH2 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM1836A

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	Q15910
Other Accession	Q4R381
Reactivity	Human
Predicted	Monkey, Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1,IgK
Clone Names	144CT2.1.1.5
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 mouse immunized with EZH2 recombinant protein.
Dilution	WB~~1:100~500 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
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 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)

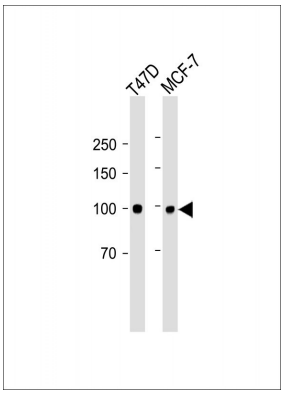
Background

This gene encodes a member of the Polycomb-group (PcG) family. PcG family members form multimeric protein complexes, which are involved in maintaining the transcriptional repressive state of genes over successive cell generations. This protein associates with the embryonic ectoderm development protein, the VAV1 oncoprotein, and the X-linked nuclear protein. This protein may play a role in the hematopoietic and central nervous systems. Two transcript variants encoding distinct isoforms have been identified for this gene.

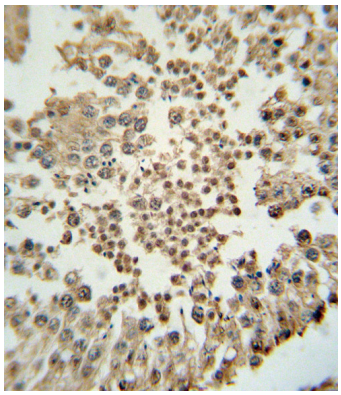
References

Long noncoding RNA as modular scaffold of histone modification complexes. Tsai MC, et al. Science, 2010 Aug 6. PMID 20616235. Implications of enhancer of zeste homologue 2 expression in pancreatic ductal adenocarcinoma. Toll AD, et al. Hum Pathol, 2010 Sep. PMID 20573371. Distinctive expression of the polycomb group proteins Bmi1 polycomb ring finger oncogene and enhancer of zeste homolog 2 in nonsmall cell lung cancers and their clinical and clinicopathologic significance. Kikuchi J, et al. Cancer, 2010 Jun 15. PMID 20564407. EZH2 and STAT6 expression profiles are correlated with colorectal cancer stage and prognosis. Wang CG, et al. World J Gastroenterol, 2010 May 21. PMID 20480530. ETS transcription factors control transcription of EZH2 and epigenetic silencing of the tumor suppressor gene Nkx3.1 in prostate cancer. Kunderfranco P, et al. PLoS One, 2010 May 10. PMID 20479932.

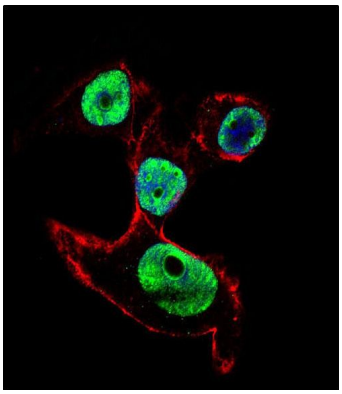
Images



All lanes: Anti-EZH2 Antibody at 1:1000 dilution Lane 1: T47D whole cell lysate Lane 2: MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Mouse IgG, (H+L), Peroxidase conjugated (ASP1613) at 1/8000 dilution. Observed band size: 98 KDa Blocking/Dilution buffer: 5% NFDM/TBST.



EZH2 Monoclonal Antibody (Cat. #AM1836a) immunohistochemistry analysis in formalin fixed and paraffin embedded human testis tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the EZH2 Monoclonal Antibody for immunohistochemistry. Clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of EZH2 Antibody (Cat#AM1836a) with MCF-7 cell followed by Alexa Fluor® 488-conjugated goat anti-mouse lgG (green). Actin filaments have been labeled with Alexa Fluor® 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).

Citations

- Ezh2 regulates adult hippocampal neurogenesis and memory.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.