

WHSC1 (D4Z8Q) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, C&R	H Mk	Endogenous	66, 152	Rabbit IgG	#O96028	7468

Product Usage Information

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
CUT&RUN	1:25

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

WHSC1 (D4Z8Z) Rabbit mAb recognizes endogenous levels of total WHSC1 protein. Based on antigen sequence, this antibody should detect WHSC1 Isoform II (UniProt O96028-1) and REIIBP (UniProt O96028-4). This antibody does not detect Isoform I (UniProt O96028-3).

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the carboxy terminus of human WHSC1 protein.

Background

Wolf-Hirschhorn syndrome candidate protein 1 (WHSC1), also known as Nuclear SET domain-containing protein 2 (NSD2) and Multiple myeloma SET domain-containing protein (MMSET), is a histone methyltransferase protein that catalyzes the di-methylation of histone H3 Lys36, a mark that is associated with transcriptionally active regions of the genome (1,2). WHSC1 haploinsufficiency is implicated in the developmental disorder known as Wolf-Hirschhorn syndrome (WHS), which is characterized by growth and mental retardation, and congenital heart defects (3). In addition, WHSC1 is overexpressed and associated with poor prognosis in a large variety of human cancers, including neuroblastoma, and ovarian, hepatocellular, endometrial, and colorectal carcinoma (4-8). In multiple myeloma, 15-20% of all patients show overexpression of WHSC1 due to a t(4;14)(p16.3;q32) chromosomal translocation that places the *WHSC1* gene upstream of a strong enhancer (2). The *WHSC1* gene encodes for three major protein isoforms. Isoform II is the full-length protein containing 1365 amino acids. Isoform I, which is generated by alternative splicing, is identical to the N-terminal 647 amino acids of isoform II. A third isoform, known as REIIBP, is generated from a transcript initiating in intron 9 of the WHSC1 locus and is identical to the C-terminal 584 amino acids of isoform II.

Background References

1. Vougiouklakis, T. et al. (2015) *Epigenomics* 7, 863-74.
2. Dolloff, N.G. and Talamo, G. (2013) *Adv Exp Med Biol* 779, 197-221.
3. Stec, I. et al. (1998) *Hum Mol Genet* 7, 1071-82.
4. Hudlebusch, H.R. et al. (2011) *Clin Cancer Res* 17, 2919-33.
5. Yang, S. et al. (2013) *Biomarkers* 18, 257-63.
6. Zhou, P. et al. (2013) *Pathol Oncol Res* 19, 303-9.
7. Xiao, M. et al. (2013) *J Surg Oncol* 107, 428-32.
8. Hudlebusch, H.R. et al. (2011) *Cancer Res* 71, 4226-35.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human **Mk:** Monkey

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