

JARID2 (D6M9X) Rabbit mAb

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Applications: W, IP, ChIP, ChIP-seq, C&R, C&T	Reactivity: H M	Sensitivity: Endogenous	MW (kDa): 150	Source/Isotype: Rabbit IgG	UniProt ID: #Q92833	Entrez-Gene Id: 3720
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Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10⁶ cells) per IP. This antibody has been validated using SimpleChIP[®] Enzymatic Chromatin IP Kits.

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

The CUT&Tag dilution was determined using CUT&Tag Assay Kit #77552.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Chromatin IP	1:50
Chromatin IP-seq	1:50
CUT&RUN	1:50
CUT&Tag	1:50

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

JARID2 (D6M9X) Rabbit mAb recognizes endogenous levels of total JARID2 protein.

Species predicted to react based on 100% sequence homology

Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp1114 of human JARID2 protein.

Background

Jumonji/ARID domain-containing protein 2 (JARID2) is a founding member of the JmjC-domain-containing protein family that is involved in regulation of histone methyltransferase activity (1,2). While many proteins in this family are protein demethylases, JARID2 lacks several conserved residues in the catalytic domain and does not exhibit protein demethylase activity (1,2). Research studies indicate that JARID2 is a nuclear protein that is highly expressed in poorly differentiated and actively dividing cells, with expression decreasing upon cellular differentiation (3,4). Expression of JARID2 protein is essential for embryonic development as the protein plays an important role in regulation of heart and liver development, neural tube fusion, and hematopoiesis (4). JARID2 is an accessory component of the polycomb repressor complex 2 (PRC2), which represses target gene expression through methylation of histone H3 at lysine 27 by EZH2 methyltransferase (5-10). JARID2 recruits the PRC2 complex to target genes and increases EZH2 methyltransferase activity by binding to nucleosomes and DNA (5-10). Additional studies show that loss of JARID2 expression results in decreased recruitment of PRC2, decreased methylation of histone H3 at lysine 27 at target genes, and delayed and incomplete differentiation of embryonic stem cells (5-10). Experimental knockdown of JARID2 in *Xenopus laevis* impairs the induction of gastrulation genes in blastula embryos and results in differentiation failure (5).

Background References

1. Cloos, P.A. et al. (2008) *Genes Dev* 22, 1115-40.
 2. Klose, R.J. et al. (2006) *Nat Rev Genet* 7, 715-27.
 3. Luzzani, C. et al. (2011) *Biochem Biophys Res Commun* 410, 816-22.
 4. Jung, J. et al. (2005) *Dev Dyn* 232, 21-32.
 5. Peng, J.C. et al. (2009) *Cell* 139, 1290-302.
 6. Shen, X. et al. (2009) *Cell* 139, 1303-14.
 7. Pasini, D. et al. (2010) *Nature* 464, 306-10.
 8. Li, G. et al. (2010) *Genes Dev* 24, 368-80.
 9. Son, J. et al. (2013) *Genes Dev* 27, 2663-77.
 10. Kaneko, S. et al. (2014) *Mol Cell* 53, 290-300.
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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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq **C&R:** CUT&RUN **C&T:** CUT&Tag

Cross-Reactivity Key

H: Human **M:** Mouse

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