Revision 5

Store at -20C

#15327

JARID1B (E2X6N) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, ChIP, ChIP-seq, C&R	H M Mk	Endogenous	180	Rabbit IgG	#Q9UGL1	10765

Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 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.

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

Jarid1B (E2X6N) Rabbit mAb recognizes endogenous levels of total Jarid1B protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human Jarid1B protein.

Background

The methylation state of lysine residues in histone proteins is a major determinant for formation of active and inactive regions of the genome and is crucial for proper programming of the genome during development (1,2). Jumonji C (JmjC) domain-containing proteins represent the largest class of potential histone demethylase proteins (3). The JmjC domain can catalyze the demethylation of mono-, di-, and tri-methyl lysine residues via an oxidative reaction that requires iron and α-ketoglutarate (3). Based on homology, both humans and mice contain at least 30 such proteins, which can be divided into 7 separate families (3). The JARID (Jumonji/AT-rich interactive domain-containing protein) family contains four members: JARID1A (also RBP2 and RBBP2), JARID1B (also PLU-1), JARID1C (also SMCX), and JARID1D (also SMCY) (4). In addition to the JmJC domain, these proteins contain JmJN, BRIGHT, C5HC2 zinc-finger, and PHD domains, the latter of which binds to methylated histone H3 (Lys9) (4). All four JARID proteins demethylate di- and tri-methyl histone H3 Lys4; JARID1B also demethylates mono-methyl histone H3 Lys4 (5-7). JARID1A is a critical RB-interacting protein and is required for Polycomb-Repressive Complex 2 (PRC2)-mediated transcriptional repression during ES cell differentiation (8). A JARID1A-NUP98 gene fusion is associated with myeloid leukemia (9). JARID1B, which interacts with many proteins including c-Myc and HDAC4, may play a role in cell fate decisions by blocking terminal differentiation (10-12). JARID1B is overexpressed in many breast cancers and may act by repressing multiple tumor suppressor genes, including *BRCA1* and *HOXA5* (13,14). JARID1C has been found in a complex with HDAC1, HDAC2, G9a, and REST, which binds to and represses REST target genes in non-neuronal cells (7). JARID1C mutations are associated with X-linked mental retardation and epilepsy (15,16). JARID1D is uniquely localized to the Y chromosome, and functions as a tumor suppressor by repressing genes associated with cell invasiveness (17). JARID1D is frequently mutated in metastatic prostate tumors, and low JARID1D levels are associated with poor prognosis in prostate cancer patients (17).

Background References

1. Kubicek, S. et al. (2006) *Ernst Schering Res Found Workshop*, 1-27.
2. Lin, W. and Dent, S.Y. (2006) *Curr Opin Genet Dev* 16, 137-42.
3. Klose, R.J. et al. (2006) *Nat Rev Genet* 7, 715-27.
4. Benevolenskaya, E.V. (2007) *Biochem Cell Biol* 85, 435-43.
5. Christensen, J. et al. (2007) *Cell* 128, 1063-76.
6. Yamane, K. et al. (2007) *Mol Cell* 25, 801-12.
7. Tahiliani, M. et al. (2007) *Nature* 447, 601-5.
8. Pasini, D. et al. (2008) *Genes Dev* 22, 1345-55.
9. van Zutven, L.J. et al. (2006) *Genes Chromosomes Cancer* 45, 437-46.

10. Secombe, J. et al. (2007) *Genes Dev* 21, 537-51.
11. Barrett, A. et al. (2007) *Int J Cancer* 121, 265-75.
12. Dey, B.K. et al. (2008) *Mol Cell Biol* 28, 5312-27.
13. Barrett, A. et al. (2002) *Int J Cancer* 101, 581-8.
14. Lu, P.J. et al. (1999) *J Biol Chem* 274, 15633-45.
15. Tzschach, A. et al. (2006) *Hum Mutat* 27, 389.
16. Jensen, L.R. et al. (2005) *Am J Hum Genet* 76, 227-36.
17. Li, N. et al. (2016) *Cancer Res* 76, 831-43.

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 **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human **M:** Mouse **Mk:** Monkey

Trademarks and Patents

Limited Uses