

#2898 Store at -20°C

JMJD2B Antibody

✓ 100 µl (10 western blots)

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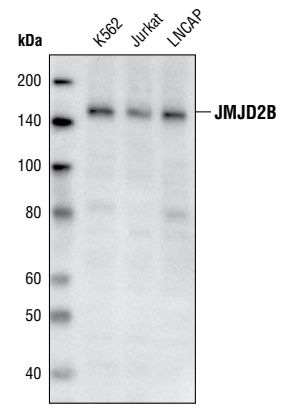
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications W, IP Endogenous	Species Cross-Reactivity* H, (Mk)	Molecular Wt. 150 kDa	Source Rabbit**
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Background: The methylation state of lysine residues in histone proteins is a major determinant of the 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 JMJD2 (Jumonji domain-containing protein 2) family, also known as JHDM3 (JmjC domain-containing histone demethylation protein 3) family, contains four members: JMJD2A/JHDM3A, JMJD2B/JHDM3B, JMJD2C/JHDM3C and JMJD2D/JHDM3D. In addition to the JmjC domain, these proteins also contain JmJN, PHD and Tudor domains, the latter of which has been shown to bind to methylated histone H3 Lys4 and Lys9, and methylated histone H4 Lys20 (4,5). JMJD2 proteins have been shown to demethylate di- and tri-methyl histone H3 Lys9 and Lys36, and function as both activators and repressors of transcription (6-11). JMJD2A, JMJD2C and JMJD2D function as coactivators of the androgen receptor in prostate tumor cells (7). In contrast, JMJD2A also associates with Rb and N-CoR corepressor complexes and is necessary for transcriptional repression of target genes (8,9). JMJD2B antagonizes histone H3 Lys9 tri-methylation at pericentric heterochromatin (10). JMJD2C, also known as GASC1, is amplified in squamous cell carcinomas and metastatic lung carcinoma, and inhibition of JMJD2C expression decreases cell proliferation (11,12). JMJD2C has also been identified as a downstream target of Oct-4 and is critical for the regulation of self-renewal in embryonic stem cells (13).

Specificity/Sensitivity: JMJD2B Antibody detects endogenous levels of total JMJD2B protein. The antibody does not cross-react with other Jumonji C proteins, including JMJD2A, JMJD2C and JMJD2D.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the human JMJD2B protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell lines using JMJD2B Antibody.

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) Chen, Z. et al. (2007) *Proc Natl Acad Sci USA* 104, 10818-23.
- (5) Lee, J. et al. (2008) *Nat Struct Mol Biol* 15, 109-11.
- (6) Whetstone, J.R. et al. (2006) *Cell* 125, 467-81.
- (7) Shin, S. and Janknecht, R. (2007) *Biochem Biophys Res Commun* 359, 742-6.
- (8) Gray, S.G. et al. (2005) *J Biol Chem* 280, 28507-18.
- (9) Zhang, D. et al. (2005) *Mol Cell Biol* 25, 6404-14.
- (10) Fodor, B.D. et al. (2006) *Genes Dev* 20, 1557-62.
- (11) Cloos, P.A. et al. (2006) *Nature* 442, 307-11.
- (12) Italiano, A. et al. (2006) *Cancer Genet Cytogenet* 167, 122-30.
- (13) Loh, Y.H. et al. (2007) *Genes Dev* 21, 2545-57.

Entrez-Gene ID #23030
Swiss-Prot Acc. #O94953

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

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:25

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

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