Store at -20°C

#3457

JMJD3 Antibody

☑ 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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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.

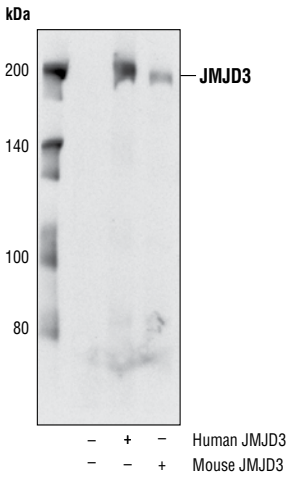
Entrez-Gene ID #23135
Swiss-Prot Acc. #O15054

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Transfected	H, M, (Mk, Hr)	200 kDa	Rabbit**

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 three members of the UTX/UTY family include the ubiquitously transcribed X chromosome tetratricopeptide repeat protein (UTX), the ubiquitously transcribed Y chromosome tetratricopeptide repeat protein (UTY) and JmjC domain-containing protein 3 (JMJD3) (3). This family of proteins has been shown to demethylate both di- and tri-methyl histone H3 Lys 27 (4-8). The UTX gene escapes X inactivation in females and is ubiquitously expressed (9). UTX functions to regulate HOX gene expression during development (4-6). JMJD3 functions to regulate gene expression in macrophages responding to various inflammatory stimuli and has been shown to be upregulated in prostate cancer (7,8). Both UTX and JMJD3 interact with mixed-lineage leukemia (MLL) complexes 2 and 3, both of which have been shown to methylate histone H3 at Lys4 (6,7). The UTY gene is expressed in most tissues in the male mouse (10). The function of UTY is largely unknown.

Specificity/Sensitivity: JMJD3 Antibody detects transfected levels of JMJD3 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the human JMJD3 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from HeLa cells, untransfected or transfected with human or mouse JMJD3, using JMJD3 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) Agger, K. et al. (2007) *Nature* 449, 731–4.
(5) Lan, F. et al. (2007) *Nature* 449, 689–94.
(6) Lee, M.G. et al. (2007) *Science* 318, 447–50.
(7) De Santa, F. et al. (2007) *Cell* 130, 1083–94.
(8) Xiang, Y. et al. (2007) *Cell Res* 17, 850–7.
(9) Greenfield, A. et al. (1998) *Hum Mol Genet* 7, 737–42.
(10) Greenfield, A. et al. (1996) *Nat Genet* 14, 474–8.

Storage: Supplied in 10 mM 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

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.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.

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