Revision 7

Store at -20C

#3314

JMJD1B (C69G2) 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, IF-IC, C&R	H Mk	Endogenous	220	Rabbit IgG	#Q7LBC6	51780

Product Usage Information

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

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:25
Immunofluorescence (Immunocytochemistry)	1:200
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

JMJD1B (C69G2) Rabbit mAb detects endogenous levels of JMJD1B protein (all three isoforms). This antibody does not cross react with other Jumonji C proteins, including HR, JMJD1A and JMJD1C.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr579 of the human JMJD1B protein.

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 the 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 of several proteins has been shown to 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 seven separate families (3). The JMJD1 (Jumonji domain-containing protein 1) family, also known as JHDM2 (JmjC domain-containing histone demethylation protein 2) family, contains four members: hairless (HR), JMJD1A/JHDM2A, JMJD1B/JHDM2B, and JMJD1C/JHDM2C. Hairless is expressed in the skin and brain and acts as a co-repressor of the thyroid hormone receptor (4-6). Mutations in the hairless gene cause alopecia in both mice and humans (4,5). JMJD1A is expressed in meiotic and post-meiotic male germ cells, contributes to androgen receptor-mediated gene regulation, and is required for spermatogenesis (7-9). It has also been identified as a downstream target of OCT4 and STAT3 and is critical for the regulation of self-renewal in embryonic stem cells (10,11). JMJD1B is a more widely expressed family member and is frequently deleted in myeloid leukemia (12). JMJD1C (also known as TRIP8) is a co-factor of both the androgen and thyroid receptors and has a potential link to autism (13-15). Members of the JMJD1/JHDM2 family have been shown to demethylate mono-methyl and di-methyl histone H3 (Lys9) (3,8).

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. Cachon-Gonzalez, M.B. et al. (1994) *Proc Natl Acad Sci USA* 91, 7717-21.
5. Ahmad, W. et al. (1998) *Science* 279, 720-4.
6. Potter, G.B. et al. (2001) *Genes Dev* 15, 2687-701.
7. Höög, C. et al. (1991) *Mol Reprod Dev* 30, 173-81.
8. Yamane, K. et al. (2006) *Cell* 125, 483-95.
9. Okada, Y. et al. (2007) *Nature* 450, 119-23.
10. Loh, Y.H. et al. (2007) *Genes Dev* 21, 2545-57.
11. Ko, S.Y. et al. (2006) *Cell Struct Funct* 31, 53-62.
12. Hu, Z. et al. (2001) *Oncogene* 20, 6946-54.
13. Lee, J.W. et al. (1995) *Mol Endocrinol* 9, 243-54.
14. Wolf, S.S. et al. (2007) *Arch Biochem Biophys* 460, 56-66.
15. Castermans, D. et al. (2007) *Eur J Hum Genet* 15, 422-31.

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 **IF-IC:** Immunofluorescence (Immunocytochemistry) **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human **Mk:** Monkey

Trademarks and Patents

Limited Uses