

BACKGROUND

The methylation state of histones can be dynamically regulated by histone methyltransferases and demethylases. LSD1 (also known as AOF2) and the jumonji C (JmjC)-domain-containing proteins have been shown to possess histone demethylase activity. LSD1 catalyses removal of H3K4me2/H3K4me1 through a flavin-adenine-dinucleotide-dependent oxidation reaction. In contrast, JmjC-domain-containing proteins remove methyl groups from histones through a hydroxylation reaction that requires ketoglutarate and Fe(II) as cofactors.¹ JHDM2A (also known as JMJD1A and KDM3A) is a JmjC domain-containing protein, which specifically demethylates mono- and dimethyl-H3K9. Mutational studies indicate that a JmjC domain and a zinc finger present in JHDM2A are required for its enzymatic activity.² It was shown that JHDM2A plays an important role in nuclear hormone receptor-mediated gene activation and male germ cell development.³ In addition, JHDM2A was involved in regulating fat metabolic gene expression in muscle and brown fat tissue, and the knockout mice exhibited obesity and hyperlipidemia.⁴

References:

1. Bartova E et al.: J. Histochem. Cytochem. 56:711-721, 2008.
2. Lan F et al.: Curr Opin Cell Biol. 20: 316-325, 2008.
3. Yamane K et al.: Cell 125:483-495, 2006.
4. Tateishi K et al.: Nature 458:757-761, 2009.

TECHNICAL INFORMATION

Source:

JMJD1A antibody is a mouse monoclonal antibody raised against recombinant human JMJD1A fragments expressed in *E. coli*.

Specificity and Sensitivity:

This antibody detects endogenous JMJD1A proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

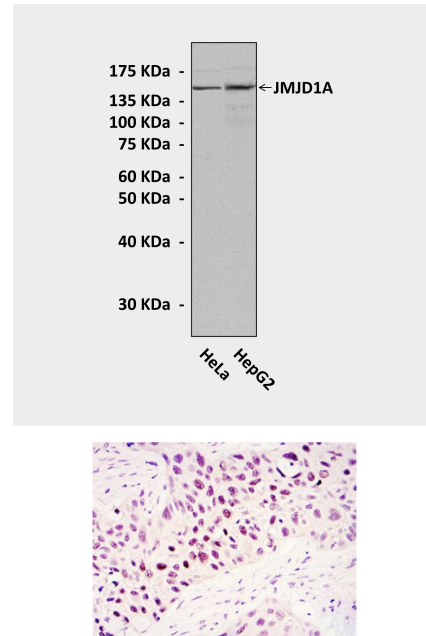
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	1:50-200
ICC	1:50-200
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Top: Western Blot detection of JMJD1A proteins in HeLa and HepG2 cell lysates using JMJD1A antibody. **Bottom:** This antibody stains paraffin-embedded lung cancer tissue in immunohistochemical analysis.

