PRODUCT INFORMATION

JMJD2D Strep-tagged (human recombinant)

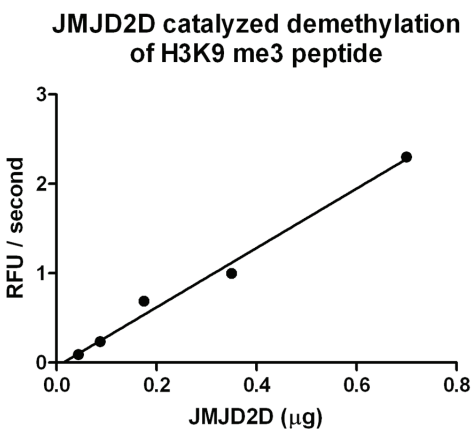
Item No. 11300

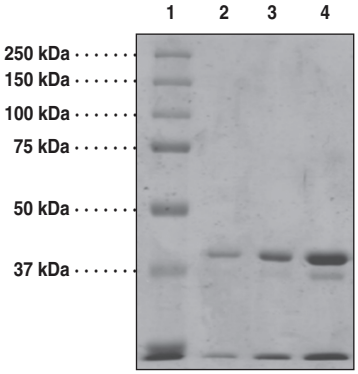
Overview and Properties

Synonyms:	Jumonji Domain Containing 2D, KDM4D, Lysine-specific Demethylase 4D
Source:	Recombinant N-terminal Strep II-tagged protein expressed in *E. coli*
Amino Acids:	4-354
Uniprot No.:	Q6B0I6
Molecular Weight:	42.6 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein.
Stability:	≥6 months
Purity:	***batch specific*** (≥70% estimated by SDS-PAGE)
Supplied in:	***batch specific***
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to produce 1 nmol of NADH per minute at 37°C in 50 mM HEPES buffer, pH 7.4, containing 50 mM sodium chloride, 1 mM ascorbic acid, 50 µM ferrous ammonium sulfate, 1 mM NAD^+, 1 mM α-ketoglutarate, 0.1 µM FDH, and 125 µM H3K9me3 peptide.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images





Lane 1: MW Markers
Lane 2: JMJD2D (2.5 µg)
Lane 3: JMJD2D (5 µg)
Lane 4: JMJD2D (10 µg)

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Description

Methylation of lysine residues in core histones plays a critical role in regulating gene expression.[1] Jumonji domain containing 2D (JMJD2D) catalyzes the demethylation of di- and tri-methylated forms of histone H3 at lysine residue 9 (me 2/3), leading to transcriptional repression and activation, respectively.[2] Like other JmjC protein hydroxylase family members, JMJD2D is an α-ketoglutarate-dependent Fe (II) oxygenase.[3] Purification of Fe-dependent JmjC family members by IMAC can result in displacement of the catalytic iron and decreased activity, therefore this Strep-tagged protein is purified by affinity chromatography using Strep-Tactin coated resin.[4] Because of their implication in cancer cell growth, jumonji C domain-containing histone demethylase inhibitors may have the capacity to be anticancer agents.[1]

References

1. Hamada, S., Kim, T.-D., Suzuki, T., *et al.* Synthesis and activity of N-oxalylglycine and its derivatives as Jumonji C-domain-containing histone lysine demethylase inhibitors. *Bioorg. Med. Chem. Lett.* **19(10)**, 2852-2855 (2009).
2. Kouzarides, T. Chromatin modifications and their function. *Cell* **128(4)**, 693-705 (2007).
3. Couture, J.-F., Collazo, E., Ortiz-Tello, P.A. , *et al.* Specificity and mechanism of JMJD2A, a trimethyllysine-specific histone demethylase. *Nat. Struct. Mol. Biol.* **14(8)**, 689-695 (2007).
4. Krishnan, S., Collazo, E., Ortiz-Tello, P.A., *et al.* Purification and assay protocols for obtaining highly active Jumonji C demethylases. *Anal. Biochem.* **420(1)**, 48-53 (2012).

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