PRODUCT INFORMATION

JMJD2A tudor domains (human, recombinant)

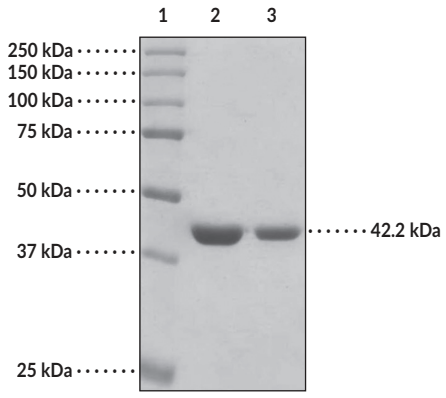
Item No. 14134

Overview and Properties

Synonyms:	JHDM3A, Jumonji Domain Containing 2A, KDM4A, Lysine (K)-specific Demethylase 4A
Source:	Expressed in *E. coli*
Amino Acids:	888-1,023 (N-terminal truncation)
Molecular Weight:	42.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	***batch specific*** (≥90% estimated by SDS-PAGE)
Supplied in:	50 mM Tris-HCl, pH 8.0, with 150 mM sodium chloride and 20% glycerol
Protein Concentration:	***batch specific*** mg/ml

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

Image



Lane 1: MW Markers
Lane 2: JMJD2A Tudor (5 µg)
Lane 3: JMJD2A Tudor (2.5 µg)

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Description

Jumonji Domain Containing 2A (JMJD2A) is a lysine-specific demethylase that catalyzes the demethylation of histone H3 at lysine residues 9 and 36 and histone H1.4 at lysine residue 26.[1-3] It is composed of the JmjN N-terminal domain, JmjC catalytic domain, two plant homeodomains (PHDs), and two tudor domains that recognize the methylated histones.[3] JMJD2A is ubiquitously expressed and localized to the nucleus.[4] It is involved in the regulation of gene expression in a context-dependent manner, having roles in both transcriptional silencing and activation of androgen and estrogen receptors (ERs).[3] Knockdown of JMJD2A inhibits the proliferation of ER-positive and -negative breast cancer cells and induces apoptosis and cell cycle arrest in colon cancer cells. It is overexpressed in various cancers, including prostate, lung, and colorectal, as well as glioblastomas and endometrial carcinomas, and is associated with higher tumor grade and decreased disease-free survival in breast cancer.[5] Cayman's JMJD2A tudor domains (human, recombinant) can be used for Western blot (WB) applications.

References

1. 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).
2. Lee, J., Thompson, J.R., Botuyan, M.V., *et al.* Distinct binding modes specify the recognition of methylated histones H3K4 and H4K20 by JMJD2A-tudor. *Nat. Struct. Mol. Biol.* **15(1)**, 109-111 (2008).
3. Berry, W.L. and Janknecht, R. KDM4/JMJD2 histone demethylases: Epigenetic regulators in cancer cells. *Cancer Res.* **73(10)**, 2936-2942 (2013).
4. Gray, S.G., Iglesias, A.H., Lizcano, F., *et al.* Functional characterization of JMJD2A, a histone deacetylase- and retinoblastoma-binding protein. *J. Biol. Chem.* **280(31)**, 28507-28518 (2005).
5. Lee, D.H., Kim, G.W., Jeon, Y.H., *et al.* Advances in histone demethylase KDM4 as cancer therapeutic targets. *FASEB J.* **34(3)**, 3461-3484 (2020).

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