Recombinant JMJD1A / KDM3A protein

Catalog No: 31456, 31856
Expressed In: Baculovirus

Quantity: 20 µg
Concentration: 0.35 µg/µl
Source: Human

Buffer Contents: Recombinant JMJD1A / KDM3A protein is supplied in 25 mM HEPES pH 7.5, 300 mM NaCl, 5% glycerol, 0.04% Triton X-100, 0.2 mM TCEP. Please refer to product insert upon arrival for lot-specific concentration.

Background: KDM3A (lysine (K)-specific demethylase 3A), also known as **JMJD1A (Jumonji Domain Containing 1A)** is a histone demethylase that preferentially demethylates mono- and dimethylated lysine 9 of histone H3, with a preference for the dimethylated residue. KDM3A has little or no activity on trimethylated lysine 9. KDM3A is involved in hormone-dependent transcriptional activation by participating in the recruitment to androgen-receptor target genes resulting in H3 lysine 9 demethylation and transcriptional activation. KDM3A is also involved in spermatogenesis where it regulates expression of target genes such as PRM1 and TMP1 which are required for packaging and condensation of sperm chromatin. KDM3A contributes to obesity resistance through its regulation of metabolic genes such as PPARα and UCP1.

Protein Details: Recombinant JMJD1A / KDM3A was expressed in a baculovirus expression system as the full length protein (accession number NP_001140160.1) with an N-terminal FLAG-Tag. The molecular weight of JMJD1A / KDM3A is 151.6 kDa.

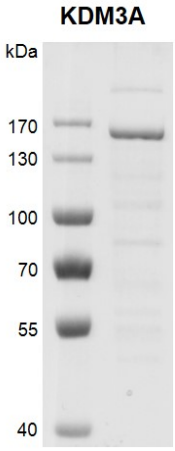
Application Notes: Recombinant JMJD1A / KDM3A is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

Histone Demethylase Assay Conditions: 3 µM H3K9me1 peptide was incubated with different concentrations of JMJD1A / KDM3A protein in 10 µl reaction system containing 50 mM HEPES-NaOH pH 7.5, 1 mM TCEP, 50 µM 2-OG, 50 µM Ascorbate, 25 µM (NH4)2Fe(SO4)2·6H2O for 2 hours, then 10 µl anti-H3K9me0 antibody and SA-XL665 mixture (1:100 dilution in HTRF Detection Buffer) was added to each reaction system and incubated for 30 min. All the operations and reactions were performed at room temperature. HTRF assay was used for detection.

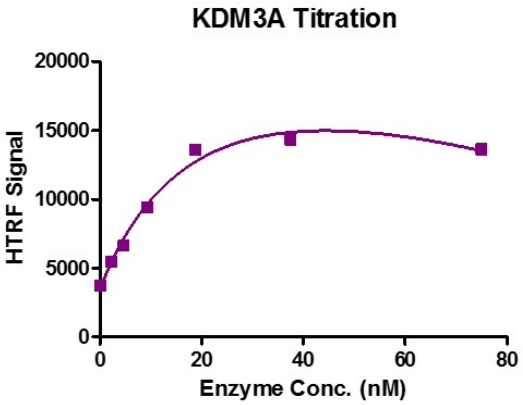
References: This protein is described in the following references:
Du ZM *et al.* (2011) PLoS One 6:e19137. doi: 10.1371/journal.pone.0019137
Guo X *et al.* (2011) Neoplasma 58:153-157
Cell Death Dis. (2018). 9(10): 1038. PMID: 30305606.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

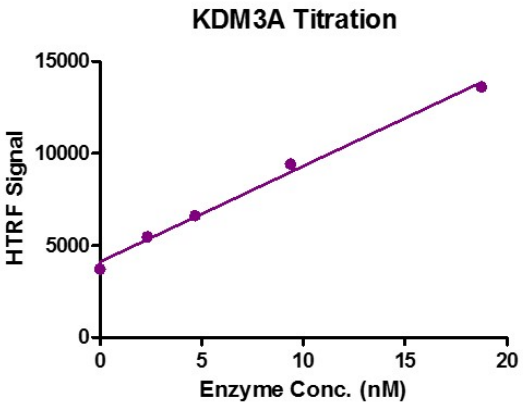
This product is for research use only and is not for use in diagnostic procedures.



Recombinant JMJD1A / KDM3A protein gel.
JMJD1A / KDM3A protein was run on a 8% SDS-PAGE gel and stained with Coomassie blue.



HTRF assay for JMJD1A / KDM3A activity
3 µM H3K9me1 peptide was incubated with JMJD1A / KDM3A in reaction buffer for 2 hours at room temperature. Anti-H3K9me0 antibody was used to detect reaction product.



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