Catalog No: 31576, 31976
Lot No: 29516001
Expressed In: Baculovirus

Quantity: 10, 1000 µg
Concentration: 0.15 µg/µl
Source: Human

Buffer Contents: Recombinant KDM7A protein is supplied at a concentration of 0.15 µg/µl in 25 mM HEPES pH 7.5, 300 mM NaCl, 5% glycerol, 0.04% Triton X-100, 0.2 mM TCEP.

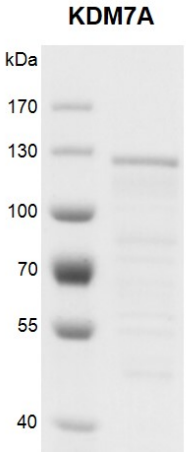
Background: KDM7A (Lysine (K)-specific demethylase 7A), also known as Jumonji C Domain Containing Histone Demethylase 1 Homolog D (JHDM1D), is a member of the JmjC-containing (Jumonji-C) class of histone demethylase proteins that are involved in the regulation of genome function through the removal of methyl groups from histones. KDM7A has two N-terminal domains, a PHD finger that binds tri-methylated lysine 4 of histone H3 (H3K4me3) and a Jumonji domain that demethylates Histone H3 dimethyl Lys9 (H3K9me2) and Histone H3 dimethyl Lys27 (H3K27me2) (which are all modifications associated with transcriptional repression). The PHD domain of KDM7A specifically binds H3K4me3, affecting histone demethylase specificity. In the presence of H3K4me3, it has no demethylase activity toward H3K9me2, while it has high activity toward H3K27me2. It also demethylates H3K9me2 in absence of H3K4me3. KDM7A demethylates H4K20me1 only when nucleosome is used as a substrate.

Protein Details: Recombinant KDM7A (accession number NP_085150.1) was expressed in Sf9 and contains an N-terminal FLAG tag with a molecular weight of 109.6 kDa. The recombinant protein is >70% pure by SDS-PAGE.

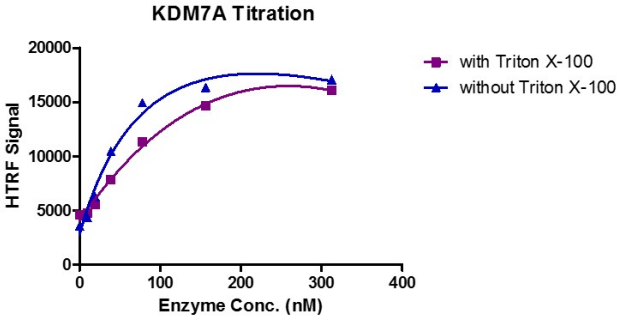
Application Notes: Recombinant KDM7A is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

Protein Function: H3K9me2, H3K27me2 and H4K20me1 demethylase.

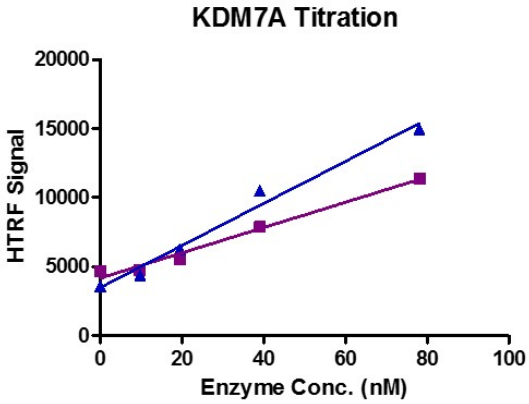
Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product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



Recombinant KDM7A protein gel.
KDM7A protein was run on an 8% SDS-PAGE gel and stained with Coomassie Blue.



HTRF assay for KDM7A activity.
1 µM H3K9me2 peptide was incubated with KDM7A protein in reaction buffer with or without 0.02% Triton X-100, respectively, for 1 hour at room temperature. KDM7A enzyme was used in a HTRF assay to determine enzyme linearity. Demethylated peptide (H3K9me0) was measured using H3K9me0-specific antibody. The results show that 0.02% Triton X-100 slightly inhibits the activity of KDM7A.



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