

Recombinant Mouse KAT2A Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51908

Size: 10ug, 100ug

Protein Name: Histone acetyltransferase KAT2A (EC 2.3.1.48) (General control of amino acid synthesis protein 5-like 2) (Histone acetyltransferase GCN5) (MmGCN5) (Histone glutaryltransferase KAT2A) (EC 2.3.1.-) (Histone succinyltransferase KAT2A) (EC 2.3.1.-) (Lysine acetyltransferase 2A) (Protein lactyltransferase KAT2A) (EC 2.3.1.-)

Synonym: Kat2a, Gcn5l2

UniProt ID: Q9JHD2

UniProt Link: www.uniprot.org/uniprotkb/Q9JHD2/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 830 AA

Molecular Weight: 93 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAEPSQAPNPVPAAQPRPLHSPAPAPTSTPAPSPASASTPAPTPAPAPAPAAAPAGSTGSGGAGV
GSGGDPARPLSQQQRASQRKAQVRGLPRAKKLEKLGVSACKANETCKCNGWKNPKPPTAPRM
DLQQPAANLSELCRSCEHPLADHVSHLENVSEDEINRLLGMVVDVENLFMSVHKEEDTDTKQVYFY
LFKLLRKCILQMTRPVVEGSLGSPPEKPNIEQGVNLFVQYKFSHLAPRERQTMFELSKMFLCLNY
WKLETPAQFRQRSQSEDAVYKVNITRWLCYCHVPQSCDSLPRYETTHVFGRSLLRSIFTVTRRQL
LEKFRVEKDKLVPEKRTLILTHFPKFLSMLEEEIYGANSPIWESGFTMPPSEGTLVPRPATVSATVV
PSFSPSMGGGSSSLSDSAGTEPMPAGEKRKLLENLTLEDKRLRVMGDIPMELVNEVMLTITDPA
AMLGPETSLLSANAARDETARLEERRGIIIEFHVIGNSLTPKANRRVLLWLVGLQNVFVSHQLPRMPKE
YIARLVFDPKHKTALIKDGRVIGGICFRMFPTQGFTEIVFCAVTSNEQVKGYGTHLMNHLKEYHIKHSI
LYFLTYADEYAIGYFKKQGFSGDKIVPKSRYLGYIKDYEGATLMECELNPRIPTYELSHIIKKQKEIKKLI
ERKQAQIRKVYPGLSCFKEGVRQIPVESVPGIRETGWKPLGKEKGKELKDPDQLYTTLKNLLAQIKSH
PSAWPFMEPVKKSEAPDYEVIRFPIDLKTMTTERLSRYVTRKLFVADLQRVIANCREYNPPDSEY
CRCASALEKFFYFKLKEGGLIDK

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Histone acetyltransferase KAT2A (EC 2.3.1.48) (General control of amino acid synthesis protein 5-like 2) (Histone acetyltransferase GCN5) (MmGCN5) (Histone glutaryltransferase KAT2A) (EC 2.3.1.-) (Histone succinyltransferase KAT2A) (EC 2.3.1.-) (Lysine acetyltransferase 2A) (Protein lactyltransferase KAT2A) (EC 2.3.1.-) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Protein lysine acyltransferase that catalyzes acetylation of histone and non-histone proteins using acetyl-CoA (PubMed:28424240). Also catalyzes acyl-CoA-dependent acylation of lysine residues in proteins using alternative acyl-CoA donors, including propionyl-CoA, butyryl-CoA, succinyl-CoA, glutaryl-CoA, crotonyl-CoA and lactoyl-CoA (By similarity). Acts as a histone lysine succinyltransferase: catalyzes succinylation of histone H3 on 'Lys-79' (H3K79succ), with a maximum frequency around the transcription start sites of genes (By similarity). Succinylation of histones gives a specific tag for epigenetic transcription activation (By similarity). Association with the 2-oxoglutarate dehydrogenase complex, which provides succinyl-CoA, is required for histone succinylation (By similarity). In different complexes, functions either as an acetyltransferase (HAT) or as a succinyltransferase: in the SAGA and ATAC complexes, acts as a histone acetyltransferase (By similarity). Has significant histone acetyltransferase activity with core histones, but not with nucleosome core particles (By similarity). Has a strong preference for acetylation of H3 at 'Lys-9' (H3K9ac) (By similarity). Also catalyzes acetylation of histone H1.4 (H1-4) at 'Lys-34' (H1.4K34ac), a modification enriched at promoters of active genes (By similarity). Acetylation of histones gives a specific tag for epigenetic transcription activation (PubMed:28424240). Recruited by the XPC complex at promoters, where it specifically mediates acetylation of histone variant H2A.Z.1/H2A.Z, thereby promoting expression of target genes (By similarity). Involved in long-term memory consolidation and synaptic plasticity: acts by promoting expression of a hippocampal gene expression network linked to neuroactive receptor signaling (PubMed:25024434). Acts as a positive regulator of T-cell activation: upon TCR stimulation, recruited to the IL2 promoter following interaction with NFATC2 and catalyzes acetylation of histone H3 at 'Lys-9' (H3K9ac), leading to promote IL2 expression (PubMed:28424240). Required for growth and differentiation of craniofacial cartilage and bone by regulating acetylation of histone H3 at 'Lys-9' (H3K9ac) (PubMed:30424580). Regulates embryonic stem cell (ESC) pluripotency and differentiation (PubMed:30270482). Also acetylates non-histone proteins, such as CEBPB, CGAS, MRE11, PPARGC1A, PLK4 and TBX5 (PubMed:17301242). Involved in heart and limb development by mediating acetylation of TBX5, acetylation regulating nucleocytoplasmic shuttling of TBX5 (By similarity). Acts as a negative regulator of centrosome amplification by mediating acetylation of PLK4 (By similarity). Acts as a negative regulator of gluconeogenesis by mediating acetylation and subsequent inactivation of PPARGC1A (By similarity). Acts as a positive regulator of cGAS-STING signaling by mediating acetylation and activation of CGAS (By similarity). Also acts as a histone glutaryltransferase: catalyzes glutarylation of histone H4 on 'Lys-91' (H4K91glu), a mark that destabilizes nucleosomes by promoting dissociation of the H2A-H2B dimers from nucleosomes (By similarity). Catalyzes

histone H3 lactylation at 'Lys-14' and 'Lys-18' in a lactyl-CoA-dependent manner (By similarity). Lactyl-CoA for this reaction can be generated by ACSS2 (By similarity).

Subcellular Localization: Nucleus . Chromosome . Cytoplasm, cytoskeleton, microtubule organizing center, centrosome . Note=Mainly localizes to the nucleus. Localizes to sites of DNA damage. Also localizes to centrosomes in late G1 and around the G1/S transition, coinciding with the onset of centriole formation.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.