

# Recombinant Human KAT2A Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP50588

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) (hGCN5) (Histone glutaryltransferase KAT2A) (EC 2.3.1.-) (Histone succinyltransferase KAT2A) (EC 2.3.1.-) (Lysine acetyltransferase 2A) (Protein lactyltransferase KAT2A) (EC 2.3.1.-) (STAF97)

Synonym: KAT2A, GCN5, GCN5L2

UniProt ID: Q92830

UniProt Link: [www.uniprot.org/uniprotkb/Q92830/entry](http://www.uniprot.org/uniprotkb/Q92830/entry)

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 837 AA

Molecular Weight: 94 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MAEPSQAPTPAPAAQPRPLQSPAPAPTPTPAPSPASAPIPTPTPAPAPAPAAAPAGSTGTGGPGVG  
SGGAGSGGDPARPGLSQQQRASQRKAQVRGLPRAKKLEKLGVSACKANETCKCNGWKNPKPPT  
APRMDLQQPAANLSELCRSCHEPLADHVSHLENVSEDEINRLLGMVVDVENLFMSVHKEEDTDTKQ  
VYFYLFKLLRKCILQMTRPVVEGSLGSPPFKEKPNIEQGVNLFVQYKFSLHAPRERQTMFELSKMFLLC  
LNYWKLETPAQFRQRSQAEDVATYKVNYTRWLCYCHVPQSCDSLPRYETTHVFGRSLLRSIFTVTR  
RQLLEKFRVEKDKLVPEKRTLILTHFPKFLSMLEEEIYGANSPIWESGFTMPPSEGTLVPRPASVSA  
AVVPSTPIFSPSMGGGSNSSLSDSAGAEMPGEKRTLLENLTLEDAKRLRVMGDIPMELVNEVMLT  
ITDPAAMLGPETSLLSANAARDETARLEERRGIIEFHVIGNSLTPKANRRVLLWLVLQNVFSHQLPR  
MPKEYIARLVFDPKHKTALIKDGRVIGGICFRMFPTQGFTEIVFCAVTSNEQVKGYGTHLMNHLKEY  
HIKHNILYFLTYADEYAIGYFKKQGFSGDKIKVPKSRYLGYIKDYEGATLMECELNPRIPTYELSHIHKQK  
EIIKKLIERKQAQIRKVYPGLSCFKEGVRQIPVESVPGIRETGWKPLGKEKGKELKDPDQLYTTLKNLL  
AQIKSHPSAWPFMEPVKKSEAPDYEVIRFPIDLKTMTERLSRYVTRKLFVADLQRVIANCREYNP  
PDSEYCRCSALEKFFYFKLKEGGLIDK

## 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) (hGCN5) (Histone glutaryltransferase KAT2A) (EC 2.3.1.-) (Histone succinyltransferase KAT2A) (EC 2.3.1.-) (Lysine acetyltransferase 2A) (Protein lactyltransferase KAT2A) (EC 2.3.1.-) (STAF97) 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:16753578, PubMed:17301242, PubMed:21131905, PubMed:22465951, PubMed:23142079, PubMed:27796307, PubMed:29174768, PubMed:31527837, PubMed:35995428, PubMed:38128537, PubMed:27377381, PubMed:29211711, PubMed:37040526, PubMed:39561764, PubMed:39694035). 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 (PubMed:31542297, PubMed:29211711, PubMed:37040526, PubMed:39561764). 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 (PubMed:29211711). Succinylation of histones gives a specific tag for epigenetic transcription activation (PubMed:29211711). Association with the 2-oxoglutarate dehydrogenase complex, which provides succinyl-CoA, is required for histone succinylation (PubMed:29211711). In different complexes, functions either as an acetyltransferase (HAT) or as a succinyltransferase: in the SAGA and ATAC complexes, acts as a histone acetyltransferase (PubMed:17301242, PubMed:19103755, PubMed:29211711). Has significant histone acetyltransferase activity with core histones, but not with nucleosome core particles (PubMed:17301242, PubMed:19103755, PubMed:21131905). Has a strong preference for acetylation of H3 at 'Lys-9' (H3K9ac) (PubMed:21131905). Also catalyzes acetylation of histone H1.4 (H1-4) at 'Lys-34' (H1.4K34ac), a modification enriched at promoters of active genes (PubMed:22465951). Acetylation of histones gives a specific tag for epigenetic transcription activation (PubMed:17301242, PubMed:19103755, PubMed:29211711). 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 (PubMed:29973595, PubMed:31527837). Involved in long-term memory consolidation and synaptic plasticity: acts by promoting expression of a hippocampal gene expression network linked to neuroactive receptor signaling (By similarity). 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 (By similarity). Required for growth and differentiation of craniofacial cartilage and bone by regulating acetylation of histone H3 at 'Lys-9' (H3K9ac) (By similarity). Regulates embryonic stem cell (ESC) pluripotency and differentiation (By similarity). Also acetylates non-histone proteins, such as CEBPB, CGAS, MRE11, PPARGC1A, PLK4 and TBX5 (PubMed:16753578, PubMed:17301242, PubMed:27796307, PubMed:29174768, PubMed:38128537, PubMed:39694035). Involved in heart and limb development by mediating acetylation of TBX5, acetylation regulating

nucleocytoplasmic shuttling of TBX5 (PubMed:29174768). Acts as a negative regulator of centrosome amplification by mediating acetylation of PLK4 (PubMed:27796307). Acts as a negative regulator of gluconeogenesis by mediating acetylation and subsequent inactivation of PPARGC1A (PubMed:16753578, PubMed:23142079). Acts as a positive regulator of cGAS-STING signaling by mediating acetylation and activation of CGAS (PubMed:39694035). 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 (PubMed:31542297). Catalyzes histone H3 lactylation at 'Lys-14' and 'Lys-18' in a lactyl-CoA-dependent manner (PubMed:39561764). Lactyl-CoA for this reaction can be generated by ACSS2 (PubMed:39561764).; (Microbial infection) In case of HIV-1 infection, it is recruited by the viral protein Tat. Regulates Tat's transactivating activity and may help inducing chromatin remodeling of proviral genes.

Subcellular Localization: Nucleus . Chromosome . Cytoplasm, cytoskeleton, microtubule organizing center, centrosome . Note=Mainly localizes to the nucleus (PubMed:27796307). Localizes to sites of DNA damage (PubMed:25593309). Also localizes to centrosomes in late G1 and around the G1/S transition, coinciding with the onset of centriole formation (PubMed:27796307).

## 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.