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KAT2A Rabbit mAb

Catalog # AP75480

Product Information

Application	WB, IP
Primary Accession	Q92830
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	93926

Additional Information

Gene ID	2648
Other Names	KAT2A
Dilution	WB~~1:500-1:1000 IP~~1:20-1:50
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

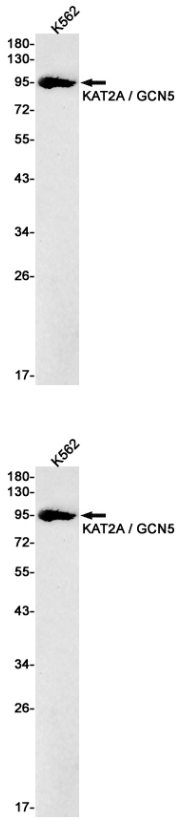
Name	KAT2A {ECO:0000303|PubMed:27796307, ECO:0000312|HGNC:HGNC:4201}
Function	Protein lysine acyltransferase that catalyzes acetylation of histone and non-histone proteins using acetyl-CoA (PubMed:16753578, PubMed:17301242, PubMed:21131905, PubMed:22465951, PubMed:23142079, PubMed:27796307, PubMed:29174768, 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 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).
Cellular Location	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).
Tissue Location	Expressed in all tissues tested.

Background

KAT2A, or GCN5, is a histone acetyltransferase (HAT) that functions primarily as a transcriptional activator. It also functions as a repressor of NF-kappa-B (see MIM 164011) by promoting ubiquitination of the NF-kappa-B subunit RELA (MIM 164014) in a HAT-independent manner (Mao et al., 2009 [PubMed 19339690]).

Images



Western blot analysis of KAT2A / GCN5 in K562 lysates using KAT2A antibody.

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