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Anti-KAT2A/GCN5 Picoband Antibody

Catalog # ABO12399

Product Information

Application	WB
Primary Accession	Q92830
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Histone acetyltransferase KAT2A(KAT2A) detection. Tested with WB in Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	2648
Other Names	Histone acetyltransferase KAT2A, 2.3.1.48, General control of amino acid synthesis protein 5-like 2, Histone acetyltransferase GCN5, HsGCN5, Lysine acetyltransferase 2A, STAF97, KAT2A, GCN5, GCN5L2, HGCN5
Calculated MW	93926
Application Details	Western blot, 0.1-0.5 □g/ml, Human
Subcellular Localization	Nucleus .
Tissue Specificity	Expressed in all tissues tested, with most abundant expression in ovary.
Source	Eukaryota
Protein Name	Histone acetyltransferase KAT2A
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of human KAT2A/GCN5 (75-106aa DPARPGLSQQQRASQRKAQVRGLPRAKKLEKL), identical to the related mouse and rat sequences.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated

freezing and thawing.

Protein Information

Name

KAT2A {ECO:0000303|PubMed:27796307, ECO:0000312|HGNC:HGNC:4201}

Function

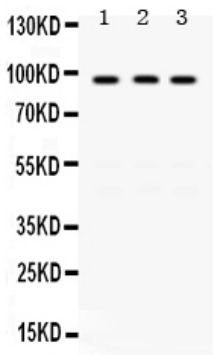
Protein lysine acyltransferase that catalyzes acetylation of histone and non-histone proteins using acetyl-CoA (PubMed:16753578, PubMed:17301242, PubMed:21131905, PubMed:22465951, PubMed:23142079, PubMed:27796307, PubMed:29174768, PubMed:31527837, PubMed:35995428, PubMed:38128537, PubMed:27377381, PubMed:29211711, 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

Histone acetyltransferase KAT2A is an enzyme that in humans is encoded by the KAT2A gene. It is mapped to 17q21. KAT2A, or GCN5, GCN5L2, is a histone acetyltransferase (HAT) that functions primarily as a transcriptional activator. The GCN5 protein, a regulator of transcription activation in yeast, promotes maximal levels of transcription by 2 transcriptional activators, GCN4 and the HAP2-HAP3-HAP4 complex. The GCN4 protein activates transcription of a large number of amino acid biosynthetic genes under limiting amino acid conditions and the HAP2-HAP3-HAP4 complex is thought to mediate transcription of genes involved in respiratory functions. GCN5 also functions as a repressor of NF-kappa-B by promoting ubiquitination of the NF-kappa-B subunit RELA in a HAT-independent manner.

Images



Anti- KAT2A/GCN5 Picoband antibody, ABO12399, Western blottingAll lanes: Anti KAT2A/GCN5 (ABO12399) at 0.5ug/mlLane 1: A431 Whole Cell Lysate at 40ugLane 2: 22RV1 Whole Cell Lysate at 40ugLane 3: COLO320 Whole Cell Lysate at 40ugPredicted bind size: 94KDObserved bind size: 94KD

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