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GCN5 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1078d

Product Information

Application	WB, E
Primary Accession	Q92830
Other Accession	Q9JHD2, Q8N1A2
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB14374
Calculated MW	93926
Antigen Region	65-94

Additional Information

Gene ID	2648
Other Names	Histone acetyltransferase KAT2A, General control of amino acid synthesis protein 5-like 2, Histone acetyltransferase GCN5, HsGCN5, Lysine acetyltransferase 2A, STAF97, KAT2A, GCN5, GCN5L2, HGCN5
Target/Specificity	This GCN5 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 65-94 amino acids from the N-terminal region of human GCN5.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	GCN5 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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.

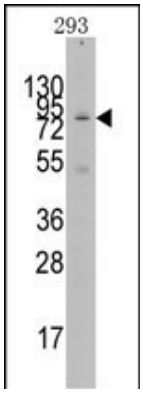
Background

GCN5 functions as a histone acetyltransferase (HAT) to promote transcriptional activation. Acetylation of histones gives a specific tag for epigenetic transcription activation. This protein has significant histone acetyltransferase activity with core histones, but not with nucleosome core particles.

References

Sabo,A., Mol. Cell. Biol. 28 (7), 2201-2212 (2008)
Wiper-Bergeron,N., Proc. Natl. Acad. Sci. U.S.A. 104 (8), 2703-2708 (2007)
Oishi,H., J. Biol. Chem. 281 (1), 20-26 (2006)
Kikuchi,H., Gene 347 (1), 83-97 (2005)

Images



Western blot analysis of anti-GCN5 Antibody (N-term)(Cat.#AP1078d) in 293 cell line lysates (35ug/lane). GCN5(arrow) was detected using the purified Pab.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.