10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GCN5 Polyclonal Antibody

Catalog # AP70058

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q92830
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	93926

Additional Information

Gene ID	2648
Other Names	KAT2A; GCN5; GCN5L2; HGCN5; Histone acetyltransferase KAT2A; General control of amino acid synthesis protein 5-like 2; Histone acetyltransferase GCN5; HsGCN5; Lysine acetyltransferase 2A; STAF97
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/20000. Not yet tested in other applications. IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

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

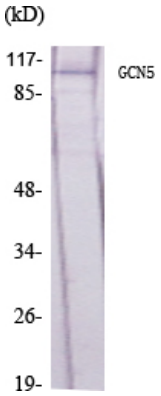
Expressed in all tissues tested.

Background

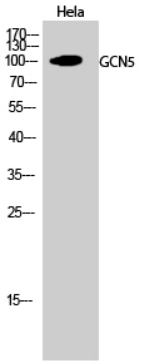
Protein lysine acyltransferase that can act both as a acetyltransferase and succinyltransferase, depending on the context (PubMed:29211711). Acts as a histone lysine succinyltransferase: catalyzes succinylation of histone H3 on 'Lys-79' (H3K79succ), with a maximum frequency around the transcription start 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

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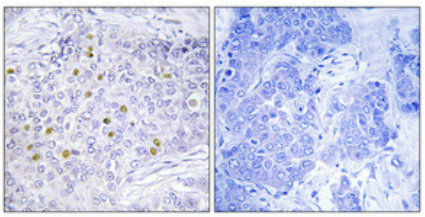
Images



Western Blot analysis of various cells using GCN5 Polyclonal Antibody diluted at 1：1000 cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit (SC-003,Inventbiotech,MN,USA).



Western Blot analysis of Hela cells using GCN5 Polyclonal Antibody diluted at 1：1000 cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit (SC-003,Inventbiotech,MN,USA).



Immunohistochemical analysis of paraffin-embedded Human breast cancer. Antibody was diluted at 1:100(4°,overnight). High-pressure and temperature Tris-EDTA,pH8.0 was used for antigen retrieval. Negetive contrl (right) obtaned from antibody was pre-absorbed by immunogen peptide.

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