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KAT1 (HAT1) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1079b

Product Information

Application	WB, IHC-P, E
Primary Accession	O14929
Other Accession	Q5M939, Q8BY71
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB5769
Calculated MW	49541
Antigen Region	389-419

Additional Information

Gene ID	8520
Other Names	Histone acetyltransferase type B catalytic subunit, Histone acetyltransferase 1, HAT1, KAT1
Target/Specificity	This KAT1 (HAT1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 389-419 amino acids from the C-terminal region of human KAT1 (HAT1).
Dilution	WB~~1:1000 IHC-P~~1:100 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	KAT1 (HAT1) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HAT1
Synonyms	KAT1

Function	Histone acetyltransferase that plays a role in different biological processes including cell cycle progression, glucose metabolism, histone production or DNA damage repair (PubMed:20953179, PubMed:23653357, PubMed:31278053, PubMed:32081014). Coordinates histone production and acetylation via H4 promoter binding (PubMed:31278053). Acetylates histone H4 at 'Lys-5' (H4K5ac) and 'Lys-12' (H4K12ac) and, to a lesser extent, histone H2A at 'Lys-5' (H2AK5ac) (PubMed:11585814, PubMed:22615379). Drives H4 production by chromatin binding to support chromatin replication and acetylation. Since transcription of H4 genes is tightly coupled to S-phase, plays an important role in S-phase entry and progression (PubMed:31278053). Promotes homologous recombination in DNA repair by facilitating histone turnover and incorporation of acetylated H3.3 at sites of double-strand breaks (PubMed:23653357). In addition, acetylates other substrates such as chromatin-related proteins (PubMed:32081014). Also acetylates RSAD2 which mediates the interaction of ubiquitin ligase UBE4A with RSAD2 leading to RSAD2 ubiquitination and subsequent degradation (PubMed:31812350). In addition to protein acetyltransferase, can use different acyl-CoA substrates, such as 2-methylpropenoyl-CoA (methacryl-CoA), and is able to mediate histone methacrylation (PubMed:34961760).
Cellular Location	[Isoform A]: Nucleus matrix Mitochondrion

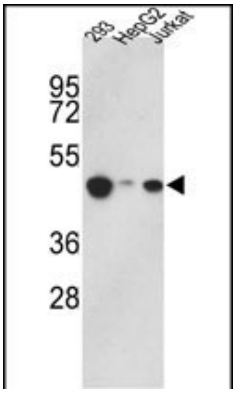
Background

Histone acetylation, particularly of histone H4, has been proposed to play an important role in replication-dependent nucleosome assembly. The HAT1 protein contains D, A, and B motifs, which are present in many N-acetyltransferases, including those that acetylate substrates other than histones. The HAT1 holoenzyme consists of 2 subunits: the catalytic 46-kD HAT1 and the accessory p46. The p46 subunit stimulated the activity of HAT1 and bound to core histones. The HAT1 holoenzyme acetylated newly synthesized but not nucleosomal histone H4 at lys5 and lys12, and, to a lesser extent, histone H2A at lys5. HAT1 and p46 polypeptides are located in the nucleus of S-phase cells. HAT1 may play a role in telomeric silencing.

References

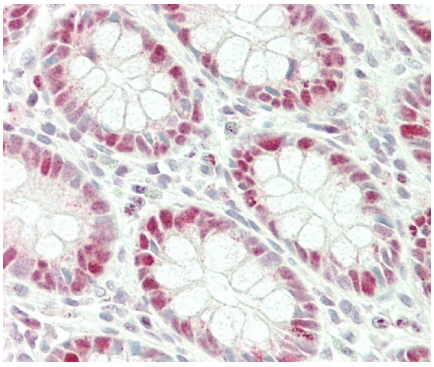
Gronroos, E., et al., Mol. Cell 10(3):483-493 (2002).
Makowski, A.M., et al., J. Biol. Chem. 276(47):43499-43502 (2001).
Cheung, P., et al., Mol. Cell 5(6):905-915 (2000).
Verreault, A., et al., Curr. Biol. 8(2):96-108 (1998).

Images

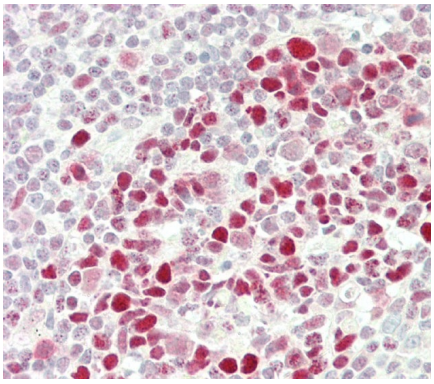


Western blot analysis of hHAT1-E404 (Cat. #AP1079b) in 293, HepG2, Jurkat cell line lysates (35ug/lane). HAT1 (arrow) was detected using the purified Pab.

Formalin-fixed and paraffin-embedded H.colon tissue



reacted with KAT1 (HAT1) Antibody (C-term) (Cat#AP1079b).



Formalin-fixed and paraffin-embedded H.tonsil tissue reacted with KAT1 (HAT1) Antibody (C-term) (Cat#AP1079b).

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