

Product Information

ANTI-HAT1 (EE-21)

Developed in Rabbit
Affinity Isolated Antibody

Product Number **H 7286**

Product Description

Anti-HAT1 (EE-21) is developed in rabbits using as immunogen a synthetic peptide corresponding to the C-terminal amino acids 399-419 of human HAT1 with N-terminal added lysine conjugated to KLH. The corresponding sequence differs by three amino acids in chicken and by one amino acid in mouse (putative sequence). The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-HAT1 (EE-21) specifically recognizes human HAT1 by immunoblotting (~46 kDa). The product cross-reacts with mouse and chicken.

The basic repeating unit of eukaryotic chromatin is the nucleosome, which consists of 147 bp of DNA wrapped around an octameric protein core formed of two molecules each of histones H2A, H2B, H3, and H4. These core histones are required for nuclear packaging and DNA organization as well as for regulating various cell processes.

Acetylation is the most extensively studied post-translational histone modification.^{1,2} Histone acetyltransferases (HATs) are members of a superfamily of enzymes that transfer the acetyl moiety from acetyl-coenzyme A cofactor onto one or more epsilon-amino groups of lysines contained in the extended N-terminal tail domains of core histone proteins. Type A HATs are located in the nucleus, and many of them play a role as transcriptional coactivators. Type B HATs, traditionally thought to locate to the cytoplasm, acetylate nascent cytoplasmic histones prior to chromatin assembly. HAT1, a type B HAT, has been identified in several species ranging from yeast and maize to human.¹⁻⁶

Native human HAT1 is a ~100 kDa heterodimer consisting of a catalytic subunit (46 kDa) and a core-histone-binding subunit (Rbap46/Hat2) that greatly stimulates the acetyltransferase activity of the holo-enzyme. Human HAT1 rapidly diacetylates soluble non-nucleosomal histone H4 at lysine-5 and lysine-12 with similar efficiency. It also acetylates, albeit to a lesser extent, histone H2A at lysine 5.

These sites are distinct from those modified in transcriptional regulation. The newly synthesized acetylated histones interact with cellular proteins such as chromatin assembly factor 1 (CAF-1) to form complexes. Following deposition of the acetylated histones into chromosomes they are rapidly deacetylated. HAT1 is present in S-phase cell nuclei and in the cytoplasm.¹ HAT1 may be involved in processes of chromatin assembly, chromatin repair, maintenance of specific heterochromatin acetylation pattern, and telomeric silencing.

Reagent

Anti-HAT1 (EE-21) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody concentration: 0.8-1.2 mg/ml

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

For immunoblotting, a minimum working antibody dilution of 1:2,500 is recommended using whole extracts of human 293 cells, mouse NIH-3T3 cells, or chicken fibroblasts.

Note: In order to obtain the best results using different techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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4. Chang, L., et al., *Biochemistry*, **36**, 469-480 (1997).
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6. Marmorstein, R., *Cell. Mol. Life Sci.*, **58**, 693-703 (2001).

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