Recombinant HAT1 protein (His tag)

Catalog Number	544062
Synonyms	Histone acetyltransferase 1
Species	Human
Expression System	E. coli
Accession	O14929
Molecular Weight	Predictes a molecular mass of 51.07 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 55 kDa band.

Product Information

Sequence Region	2-419
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 2-419 aa (O14929) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Histone Acetyltransferase 1 (HAT1) Fragment (residues 2-419) is a high-purity, soluble protein designed for structural and biochemical studies. This catalytically active fragment retains key functional domains, enabling researchers to investigate histone acetylation mechanisms, chromatin dynamics, and DNA repair pathways with enhanced experimental reliability. Histone acetyltransferase 1 (HAT1), encoded by the HAT1 gene in humans, is a crucial enzyme (EC 2.3.1.48) that catalyzes the acetylation of histone H4 at lysine 5 (H4K5ac) and lysine 12 (H4K12ac), with additional activity on histone H2A at lysine 5. It plays multifaceted roles in cell cycle progression, glucose metabolism, histone production, and DNA damage repair. HAT1 coordinates histone synthesis and acetylation by binding to the H4 promoter, facilitating S-phase entry and progression. It also promotes homologous recombination during DNA repair by enabling histone turnover and incorporation of acetylated H3.3 at double-strand break sites. Beyond histones, HAT1 acetylates other substrates, including chromatin-related proteins and RSAD2, influencing protein stability and degradation. Notably, it contributes to hepatitis B virus replication by acetylating histone H4 on viral DNA. HAT1 localizes to the nucleus (including the nucleoplasm and nuclear matrix) and mitochondria, with nuclear localization enhanced under oxidative or radiation stress, underscoring its importance in genomic integrity and cellular stress responses.