PRODUCT INFORMATION

Gcn5 (human, recombinant)

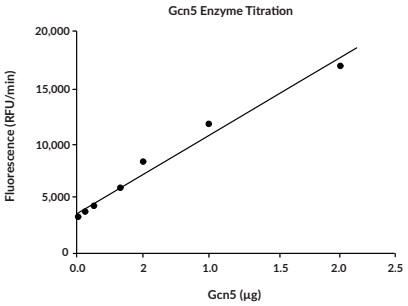
Item No. 10782

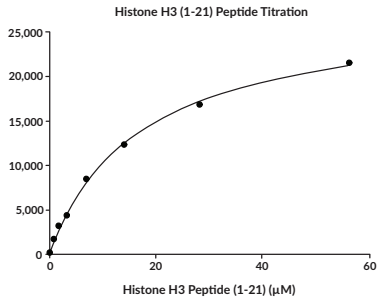
Overview and Properties

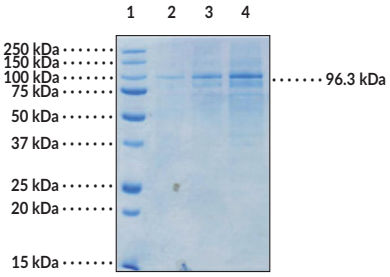
Synonyms:	General control of amino acid synthesis protein 5-like 2, KAT2A, Lysine acetyltransferase 2A, STAF97
Source:	Active recombinant N-terminal His-tagged protein expressed in Sf21 cells
Amino Acids:	2-837 (full-length)
Uniprot No.:	Q92830
Molecular Weight:	96.3 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥2 years
Purity:	≥50% estimated by SDS-PAGE
Supplied in:	50 mM Tris, pH 8.0, with 150 mM sodium chloride and 20% glycerol
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to convert 1 nmol of acetyl-CoA to reduced Coenzyme A (CoASH) per minute at 37°C in 100 mM HEPES, pH 7.5, containing 0.8% polysorbate 20. CoASH produced in the reaction is measured fluorometrically (ex. 390/em. 469) using Cayman's HAT Inhibitor Screening Assay Kit (Item No. 10006515) with 100 µM histone H3 peptide (1-21) as the acetyl acceptor.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images







Lane 1: MW Markers
Lane 2: Gcn5 (1 µg)
Lane 3: Gcn5 (2 µg)
Lane 4: Gcn5 (4 µg)

SDS-PAGE Analysis of Gcn5.

Representative gel image shown; actual purity may vary between each batch.

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Description

Gcn5 and PCAF are highly homologous members of the Gcn5-related N-acetyltransferase (GNAT) superfamily of N-acetyltransferases involved in histone acetylation.[1] Gcn5 and PCAF contain a highly conserved central core with divergent N- and C-terminal ends.[2] Gcn5/PCAF are enzymatic subunits that exist in a mutually exclusive manner as part of the mammalian SAGA and ATAC complexes.[3,4] Recombinant Gcn5 preferentially acetylates lysine 14 on histone H3 *in vitro*. Recombinant Gcn5 alone is unable to acetylate nucleosomal core histone substrates. Acetylation of the nucleosomal histones requires that Gcn5 be a part of either the multisubunit SAGA or ATAC protein complexes.[5] The multisubunit Gcn5/PCAF-containing complexes have a broad substrate specificity, including H3K9, H3K18, H4K8, and H4K16, as well as additional sites on histone H2B.[3]

References

1. Vetting, M.W., de Carvalho, L.P.S., Yu, M., *et al.* Structure and functions of the GNAT superfamily of acetyltransferases. *Arch. Biochem. Biophys.* **433(1)**, 212-226 (2005).
2. Trievel, R.C., Rojas, J.R., Sterner, D.E., *et al.* Crystal structure and mechanism of histone acetylation of the yeast GCN5 transcriptional coactivator. *Proc. Natl. Acad. Sci. USA* **96(16)**, 8931-8936 (1999).
3 Roth, S.Y., Denu, J.M., and Allis, C.D. Histone acetyltransferases. *Annu. Rev. Biochem.* **70**, 81-120 (2001).
4. Wang, Y.L., Faiola, F., Xu, M., *et al.* Human ATAC is a GCN5/PCAF-containing acetylase complex with a novel NC2-like histone fold module that interacts with the TATA-binding protein. *J. Biol. Chem.* **283(49)**, 33808-33815 (2008).
5. Grant, P.A., Sterner, D.E., Duggan, L.J., *et al.* The SAGA unfolds: Convergence of transcription regulators in chromatin-modifying complexes. *Trends Cell Biol.* **8(5)**, 193-197 (1998).

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