

PRODUCT INFORMATION



Histone H1 (bovine)

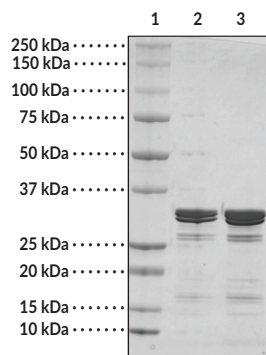
Item No. 33943

Overview and Properties

Source: Calf thymus
Amino Acids: 1-213 (H1.2), 1-221 (H1.3), and 1-219 (H1.4)
Uniprot No.: P02253, A7MAZ5, G3MWV5
Molecular Weight: 21.3 (H1.2), 22.1 (H1.3), and 21.9 (H1.4) kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥70% estimated by SDS-PAGE
Supplied in: A solution in water (frozen)

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

Image



Lane 1: MW Markers
Lane 2: Histone H1 (2 µg)
Lane 3: Histone H1 (4 µg)

SDS-PAGE Analysis of Histone H1. Histone H1 has been shown to migrate at a higher molecular weight on SDS-PAGE due to its highly charged C-terminus.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/16/2024

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Histone H1 is a nuclear protein that interacts with linker DNA regions between nucleosomes to provide nucleosome core structure stabilization.^{1,2} Histone H1 subtypes are comprised of a short N-terminal domain, a central globular domain necessary for DNA interaction, and long C-terminal domain that determines subtype binding properties by its variability.² Histones H1.1-H1.5 are expressed in somatic cells in a replication-dependent manner, and cell-type specificity varies based on histone H1 subtype.³ Histone H1 is involved in chromatin organization, gene expression, protection of DNA from digestion by micrococcal nuclease, the DNA damage response, and cell differentiation.^{2,4} Knockdown of *H1-2* and *H1-4* decreases proliferation of T47D breast cancer cells, and *H1-2* knockdown also induces cell cycle arrest at the G₁ phase in the same cells.⁵ Histone H1 is highly post-translationally modified, including phosphorylation, acetylation, citrullination, ubiquitination, and methylation.⁴ Phosphorylation of histone H1 at Thr146 is associated with increasing breast cancer tumor grade.⁶ Cayman's Histone H1 (bovine) protein can be used as a substrate for enzyme activity assays, as well as for Western blot (WB) applications.

References

1. Allan, J., Hartman, P.G., Crane-Robinson, C., *et al.* The structure of histone H1 and its location in chromatin. *Nature* **288**(5792), 675-679 (1980).
2. Roque, A., Ponte, I., and Suau, P. Interplay between histone H1 structure and function. *Biochim. Biophys. Acta*. **1859**(3), 444-454 (2016).
3. Millán-Ariño, L., Izquierdo-Bouldstridge, A., and Jordan, A. Specificities and genomic distribution of somatic mammalian histone H1 subtypes. *Biochim. Biophys. Acta* **1859**(3), 510-519 (2015).
4. Andrés, M., García-Gomis, D., Ponte, I., *et al.* Histone H1 post-translational modifications: Update and future perspectives. *Int. J. Mol. Sci.* **21**(16), 5941 (2020).
5. Sancho, M., Diani, E., Beato, M., *et al.* Depletion of human histone H1 variants uncovers specific roles in gene expression and cell growth. *PLoS Genet.* **4**(10), e1000227 (2008).
6. Harshman, S.W., Hoover, M.E., Huang, C., *et al.* Histone H1 phosphorylation in breast cancer. *J. Proteome Res.* **13**(5), 2453-2467 (2014).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM