

#41328 Store at -20°C

Histone H1.4 (D4J5Q) Rabbit mAb

**Cell Signaling**
TECHNOLOGY®**Orders:** 877-616-CELL (2355)
orders@cellsignal.com**Support:** 877-678-TECH (8324)**Web:** info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC, ChIP	H Mk	Endogenous	30	Rabbit IgG	#P10412	3008

Product Usage Information

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10⁶ cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:200 - 1:800
Chromatin IP	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

Histone H1.4 (D4J5Q) Rabbit mAb recognizes endogenous levels of total histone H1.4 protein. This antibody also cross reacts with histone H1.5 (UniProt P16401) and weakly with histones H1.1 (UniProt Q02539), H1.2 (UniProt P16403), and H1.3 (UniProt P16402).

Species predicted to react based on 100% sequence homology:

Hamster, Bovine, Dog

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala176 of human histone H1.4 protein.

Background

Histones are evolutionarily conserved proteins that play a vital role in the compaction, storage, and regulation of DNA within the eukaryotic nucleus. The basic subunit of chromatin, the nucleosome core particle, is composed of DNA wound around two copies each of the core histone proteins H2A, H2B, H3, and H4 (1-3). Formation of higher order chromatin structure is facilitated through the binding of linker histone H1 to the nucleosome particle (chromatosome) (4-6). In humans and mice, there are 11 distinct histone H1 variants, which include the somatic variants (H1.1, H1.2, H1.3, H1.4, and H1.5) that are expressed ubiquitously, and cell type specific variants such as H1t found in the testis and H1.0 expressed in terminally differentiated cells (6-10). Binding of histone H1 to chromatin limits accessibility of DNA to other proteins by stabilizing nucleosome positioning, competing for binding sites, and limiting the activity of chromatin remodeling proteins such as the SWI/SNF complex (6,11-14). Histone H1 binding is highly dynamic and is thought to be regulated by post-translational modifications (6). For example, cell cycle regulated phosphorylation of histone H1 leads to chromatin condensation and decondensation depending on the site of phosphorylation and histone H1.4 Lys34 acetylation by GCN5 has been linked to increased mobility of H1.4 and transcriptional activation (6, 15-18).

Background References

1. Kornberg, R.D. (1974) *Science* 184, 868-71.
2. Kornberg, R.D. and Thomas, J.O. (1974) *Science* 184, 865-8.
3. Workman, J.L. and Kingston, R.E. (1998) *Annu Rev Biochem* 67, 545-79.
4. Thoma, F. et al. (1979) *J Cell Biol* 83, 403-27.
5. Carruthers, L.M. et al. (1998) *Biochemistry* 37, 14776-87.
6. Harshman, S.W. et al. (2013) *Nucleic Acids Res* 41, 9593-609.
7. Eick, S. et al. (1989) *Eur J Cell Biol* 49, 110-5.
8. Carozzi, N. et al. (1984) *Science* 224, 1115-7.
9. Drabent, B. et al. (1991) *Gene* 103, 263-8.
10. Pehrson, J.R. and Cole, R.D. (1982) *Biochemistry* 21, 456-60.
11. Bustin, M. et al. (2005) *Mol Cell* 17, 617-20.
12. Hill, D.A. and Imbalzano, A.N. (2000) *Biochemistry* 39, 11649-56.
13. Ramachandran, A. et al. (2003) *J Biol Chem* 278, 48590-601.
14. Horn, P.J. et al. (2002) *Nat Struct Biol* 9, 263-7.

15. Hohmann, P. et al. (1976) *J Biol Chem* 251, 3685-92.
16. D'Anna, J.A. et al. (1978) *Nucleic Acids Res* 5, 3195-207.
17. Matsumoto, Y. et al. (1980) *Nature* 284, 181-3.
18. Kamieniarz, K. et al. (2012) *Genes Dev* 26, 797-802.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry) **ChIP:** Chromatin IP

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

SimpleChIP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.