

HMGN1 Antibody



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: W, IF-IC	Reactivity: H Mk	Sensitivity: Endogenous	MW (kDa): 18	Source/Isotype: Rabbit	UniProt ID: #P05114	Entrez-Gene Id: 3150
----------------------------------	----------------------------	-----------------------------------	------------------------	----------------------------------	-------------------------------	--------------------------------

Product Usage Information

Application

Western Blotting
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:800 - 1:1600

Storage

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

Specificity/Sensitivity

HMGN1 Antibody recognizes endogenous levels of total HMGN1 protein. This antibody does not cross-react with other HMGN proteins, including HMGN2, HMGN3, HMGN4, and HMGN5.

Species predicted to react based on 100% sequence homology

Bovine

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val65 of human HMGN1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

High mobility group (HMG) proteins are a superfamily of abundant and ubiquitous nuclear proteins that bind DNA without sequence specificity and induce structural changes to the chromatin fiber to regulate access to the underlying DNA. The HMGN family of proteins, which includes five members (HMGN1-5), is characterized by the presence of several conserved protein domains: a positively charged domain, a nucleosome binding domain, and an acidic C-terminal chromatin-unfolding domain (1,2). HMGN proteins function in transcriptional regulation and are recruited to gene promoters by transcription factors, such as estrogen receptor α (ER α), serum responsive factor (SRF), and PITX2, where they can facilitate either gene activation or repression (3-5). HMGN proteins bind specifically to nucleosomal DNA and reduce compaction of the chromatin fiber, in part by competing with linker histone H1 for nucleosome binding (6). In addition, HMGN proteins act to modulate local levels of post-translational histone modifications, decreasing phosphorylation of histone H3 at Ser10 and histone H2A at Ser1 and increasing acetylation of histone H3 at Lys14 (7-9). HMGN proteins can also modulate the activity of several chromatin-remodeling factors and restrict nucleosome mobility (10). HMGN1 (also known as HMG14) expression is tightly linked to cellular differentiation. HMGN1 is ubiquitous and highly expressed in all embryonic tissues. During mouse embryogenesis, expression is down-regulated throughout the embryo, except in committed but continuously renewing cell types undergoing active differentiation, such as the basal layer of the epithelium and kidney cells undergoing mesenchyme to epithelium transition (11,12). HMGN1 expression is also down-regulated during myogenesis, erythropoiesis, and osteogenesis (11). Over-expression of HMGN1 inhibits myotube formation in C2C12 myoblast cells and chondrocyte differentiation in primary limb bud mesenchymal cells, suggesting a role in blocking cellular differentiation (11,13). HMGN1^{-/-} mice appear normal, most likely due to partial redundancy with other family members such as HMGN2. However, these mice are hypersensitive to various stress conditions, including exposure to UV light and ionizing radiation (IR) (14,15). Further studies have shown that HMGN1 is required for efficient transcription-coupled repair (TCR) following UV treatment, and proper activation of ATM following IR treatment, both of which require HMGN1 chromatin binding activity, suggesting a direct role for HMGN1 in chromatin remodeling during DNA repair (14-17).

Background References

1. Hock, R. et al. (2007) *Trends Cell Biol* 17, 72-9.
2. Gerlitz, G. *Biochim Biophys Acta* 1799, 80-5.
3. Zhu, N. and Hansen, U. (2007) *Mol Cell Biol* 27, 8859-73.
4. Amen, M. et al. (2008) *Nucleic Acids Res* 36, 462-76.
5. Belova, G.I. et al. (2008) *J Biol Chem* 283, 8080-8.
6. Catez, F. et al. (2002) *EMBO Rep* 3, 760-6.
7. Lim, J.H. et al. (2005) *EMBO J* 24, 3038-48.
8. Lim, J.H. et al. (2004) *Mol Cell* 15, 573-84.
9. Postnikov, Y.V. et al. (2006) *Biochemistry* 45, 15092-9.

10. Rattner, B.P. et al. (2009) *Mol Cell* 34, 620-6.
 11. Furusawa, T. et al. (2006) *Mol Cell Biol* 26, 592-604.
 12. Lehtonen, S. and Lehtonen, E. (2001) *Differentiation* 67, 154-63.
 13. Pash, J.M. et al. (1993) *J Biol Chem* 268, 13632-8.
 14. Birger, Y. et al. (2003) *EMBO J* 22, 1665-75.
 15. Birger, Y. et al. (2005) *Cancer Res* 65, 6711-8.
 16. Fousteri, M. et al. (2006) *Mol Cell* 23, 471-82.
 17. Kim, Y.C. et al. (2009) *Nat Cell Biol* 11, 92-6.
-

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	W: Western Blotting IF-IC: Immunofluorescence (Immunocytochemistry)
Cross-Reactivity Key	H: Human Mk: Monkey
Trademarks and Patents	Cell Signaling Technology is a 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	<p>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.</p> <p>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.</p>