SANTA CRUZ BIOTECHNOLOGY, INC.

HMG-1 (W-18): sc-74085

The Power to Question

BACKGROUND

High mobility group (HMG) proteins 1 and 2 are ubiquitous non-histone components of chromatin. Evidence suggests that the binding of HMG proteins to DNA induces alterations in the DNA architecture including DNA bending and unwinding of the helix. HMG proteins synergize with Oct-2, members of the NFκB family, ATF-2 and c-Jun to activate transcription. Other studies indicate that phosphorylation of HMG protein is required to stimulate the transcriptional activity of the protein. Human HMG-1 and HMG-2 both contain two DNA-binding domains, termed HMG boxes. HMG proteins bind single-stranded DNA but induce conformational changes in double-stranded DNA alone.

REFERENCES

1. Wen, L., et al. 1989. A human placental cDNA clone that encodes non-histone chromosomal protein HMG-1. Nucleic Acids Res. 17: 1197-1214.
2. Bustin, M., et al. 1990. Structural features of the HMG chromosomal proteins and their genes. Biochim. Biophys. Acta 1049: 231-243.
3. Shirakawa, H. and Yoshida, M. 1992. Structure of a gene coding for human HMG-2 protein. J. Biol. Chem. 267: 6641-6645.
4. Nissen, M.S. and Reeves, R. 1995. Changes in superhelicity are introduced into closed circular DNA by binding of high mobility group protein I/Y. J. Biol. Chem. 270: 4355-4360.

CHROMOSOMAL LOCATION

Genetic locus: HMGB1 (human) mapping to 13q12.3; Hmgb1 (mouse) mapping to 5 G3.

SOURCE

HMG-1 (W-18) is a mouse monoclonal antibody raised against full length recombinant HMG-1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HMG-1 (W-18) is recommended for detection of HMG-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for HMG-1 siRNA (h): sc-37982, HMG-1 siRNA (m): sc-37983, HMG-1 shRNA Plasmid (h): sc-37982-SH, HMG-1 shRNA Plasmid (m): sc-37983-SH, HMG-1 shRNA (h) Lentiviral Particles: sc-37982-V and HMG-1 shRNA (m) Lentiviral Particles: sc-37983-V.

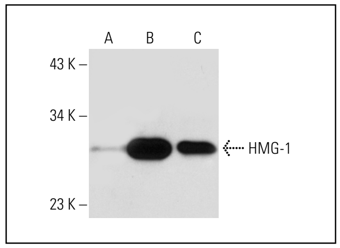
Molecular Weight of HMG-1: 30 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HMG-1 (h): 293 Lysate: sc-110487 or HMG-1 (m): 293T Lysate: sc-120823.

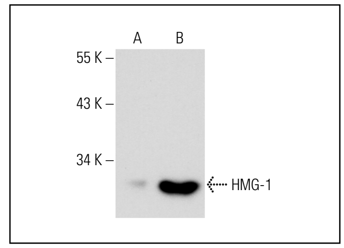
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



HMG-1 (W-18): sc-74085. Western blot analysis of HMG-1 expression in non-transfected 293T: sc-117752 (**A**), mouse HMG-1 transfected 293T: sc-120823 (**B**) and HeLa (**C**) whole cell lysates.



HMG-1 (W-18): sc-74085. Western blot analysis of HMG-1 expression in non-transfected: sc-110760 (**A**) and human HMG-1 transfected: sc-110487 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhou, H., et al. 2011. Development and characterization of a potent immunoconjugate targeting the Fn14 receptor on solid tumor cells. Mol. Cancer Ther. 10: 1276-1288.
2. Prabhavathy, D., et al. 2015. Re-expression of HPV16 E2 in SiHa (human cervical cancer) cells potentiates NFκB activation induced by TNF-α concurrently increasing senescence and survival. Biosci. Rep. 35: 389-396.
3. Kim, Y.R., et al. 2016. Peptide inhibition of p22phox and Rubicon interaction as a therapeutic strategy for septic shock. Biomaterials 101: 47-59.
4. Gao, H., et al. 2018. LncRNA ZEB2-AS1 promotes pancreatic cancer cell growth and invasion through regulating the miR-204/HMGB1 axis. Int. J. Biol. Macromol. 116: 545-551.
5. Barreiro-Alonso, A., et al. 2019. Characterization of HMGB1/2 interactome in prostate cancer by yeast two hybrid approach: potential pathobiological implications. Cancers 11: 1729.
6. Kim, H.Y., et al. 2020. Protective effect of *Vitis labrusca* leaves extract on cardiovascular dysfunction through HMGB1-TLR4-NFκB signaling in spontaneously hypertensive rats. Nutrients 12: 3096.
7. Barreiro-Alonso, A., et al. 2021. HMGB1 protein interactions in prostate and ovary cancer models reveal links to RNA processing and ribosome biogenesis through NuRD, THOC and septin complexes. Cancers 13: 4686.
8. Ye, C., et al. 2022. Hypoxia-induced HMGB1 promotes glioma stem cells self-renewal and tumorigenicity via RAGE. iScience 25: 104872.
9. Huang, Z., et al. 2023. Protective effects of nattokinase against microvasculopathy and neuroinflammation in diabetic retinopathy. J. Diabetes 15: 866-880.

RESEARCH USE

For research use only, not for use in diagnostic procedures.