

HMG-4 (I-21): sc-101972

BACKGROUND

The HMGB family, whose members include HMG-1, HMG-2, HMG-3 and HMG-4, is a highly conserved group of chromatin-associated proteins. 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 proteins is required to stimulate the transcriptional activity of HMG target proteins. HMG proteins bind single-stranded DNA, but are able to induce conformational changes in double-stranded DNA. HMG-4 is a 186 amino acid protein that localizes to the nucleus. Like all other HMGB family proteins, HMG-4 contains two HMG box DNA-binding domains which can bind DNA either in a sequence-specific manner, or without sequence specificity. Additionally, the HMG box DNA-binding domains are able to preferentially bind DNA distortions, such as kinks and bulges, and, via this binding, can bend DNA.

REFERENCES

- Bustin, M., Lehn, D.A. and Landsman, D. 1990. Structural features of the HMG chromosomal proteins and their genes. *Biochim. Biophys. Acta.* 1049: 231-243.
- Pedersen, T.J., Arwood, L.J., Spiker, S., Gultinan, M.J. and Thompson, W.F. 1991. High mobility group chromosomal proteins bind to AT-rich tracts flanking plant genes. *Plant Mol. Biol.* 16: 95-104.
- Putnam, C.D., Copenhaver, G.P., Denton, M.L. and Pikaard, C.S. 1994. The RNA polymerase I transactivator upstream binding factor requires its dimerization domain and high-mobility-group (HMG) box 1 to bend, wrap, and positively supercoil enhancer DNA. *Mol. Cell. Biol.* 14: 6476-6488.
- Online Mendelian Inheritance in Man, OMIM. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 163905. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Stros, M., Launholt, D. and Grasser, K.D. 2007. The HMG-box: a versatile protein domain occurring in a wide variety of DNA-binding proteins. *Cell. Mol. Life Sci.* 64: 2590-2606.
- McCauley, M.J., Zimmerman, J., Maher, L.J. and Williams, M.C. 2007. HMGB binding to DNA: single and double box motifs. *J. Mol. Biol.* 374: 993-1004.
- Watson, M., Stott, K. and Thomas, J.O. 2007. Mapping intramolecular interactions between domains in HMGB1 using a tail-truncation approach. *J. Mol. Biol.* 374: 1286-1297.
- Kriatchko, A.N., Bergeron, S. and Swanson, P.C. 2008. HMG-box domain stimulation of RAG1/2 cleavage activity is metal ion dependent. *BMC Mol. Biol.* 9: 32.

CHROMOSOMAL LOCATION

Genetic locus: HMGB4 (human) mapping to 1p35.1.

RESEARCH USE

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

SOURCE

HMG-4 (I-21) is a purified rabbit polyclonal antibody raised against HMG-4 of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

HMG-4 (I-21) is recommended for detection of HMG-4 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HMG-4 siRNA (h): sc-88728, HMG-4 shRNA Plasmid (h): sc-88728-SH and HMG-4 shRNA (h) Lentiviral Particles: sc-88728-V.

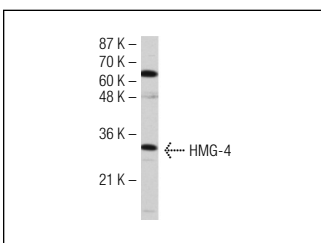
Molecular Weight of HMG-4 : 22 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



HMG-4 (I-21): sc-101972. Western blot analysis of HMG-4 expression in Jurkat whole cell lysate.

STORAGE

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