SANTA CRUZ BIOTECHNOLOGY, INC.

HMG-4 (I-12): sc-131942

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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3. 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.
4. 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/
5. 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.
6. 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.
7. 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.
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STORAGE

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

SOURCE

HMG-4 (I-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HMG-4 of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131942 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-131942 X, 200 µg/0.1 ml.

APPLICATIONS

HMG-4 (I-12) is recommended for detection of HMG-4 of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other HMG family members.

HMG-4 (I-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HMG-4: 22 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.