SANTA CRUZ BIOTECHNOLOGY, INC.

HMG-3 (X-25): sc-133660

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-3, also known as HMGB3 (High mobility group protein B3), is a 200 amino acid protein that localizes to the nucleus and is expressed in hematopoietic stem cells. As a member of a family of chromatin-binding proteins, HMG-3 facilitates transcription factor binding by altering DNA structure. HMG-3 may play a role in regulating proliferation and differentiation of certain cell lines. Like all other HMGB family proteins, HMG-3 contains two HMG box DNA-binding domains which can bind DNA either in a sequence-specific manner, or without sequence specificity.

REFERENCES

1. Gordon, J.S., Rosenfeld, B.I., Kaufman, R. and Williams, D.L. 1980. Evidence for a quantitative tissue-specific distribution of high mobility group chromosomal proteins. Biochemistry 19: 4395-4402.
2. Pedersen, T.J., Arwood, L.J., Spiker, S., Guiltinan, 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.
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. Nemeth, M.J., Curtis, D.J., Kirby, M.R., Garrett-Beal, L.J., Seidel, N.E., Cline, A.P. and Bodine, D.M. 2003. HMGB3: an HMG-box family member expressed in primitive hematopoietic cells that inhibits myeloid and B-cell differentiation. Blood 102: 1298-1306.
5. Strichman-Almashanu, L.Z., Bustin, M. and Landsman, D. 2003. Retroposed copies of the HMG genes: a window to genome dynamics. Genome Res. 13: 800-812.
6. Nemeth, M.J., Cline, A.P., Anderson, S.M., Garrett-Beal, L.J. and Bodine, D.M. 2005. HMGB3 deficiency deregulates proliferation and differentiation of common lymphoid and myeloid progenitors. Blood 105: 627-634.

CHROMOSOMAL LOCATION

Genetic locus: HMGB3 (human) mapping to Xq28; Hmgb3 (mouse) mapping to X A7.2.

SOURCE

HMG-3 (X-25) is a Protein A purified rabbit polyclonal antibody raised against synthetic HMG-3 peptide of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and <0.02% sucrose.

APPLICATIONS

HMG-3 (X-25) is recommended for detection of HMG-3 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HMG-3 siRNA (h): sc-75264, HMG-3 siRNA (m): sc-75265, HMG-3 shRNA Plasmid (h): sc-75264-SH, HMG-3 shRNA Plasmid (m): sc-75265-SH, HMG-3 shRNA (h) Lentiviral Particles: sc-75264-V and HMG-3 shRNA (m) Lentiviral Particles: sc-75265-V.

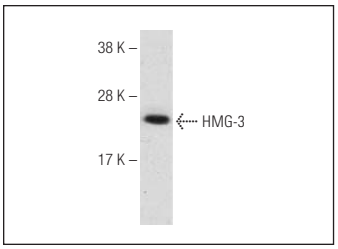
Molecular Weight of HMG-3: 23 kDa.

Positive Controls: human placenta tissue extract.

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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



HMG-3 (X-25): sc-133660. Western blot analysis of HMG-3 expression in human placenta tissue extract.

STORAGE

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