SANTA CRUZ BIOTECHNOLOGY, INC.

Msx-1 (M-85): sc-15395

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Msx homeobox genes encode for transcription factors that control morphogenesis and are expressed at sites of epithelial-mesenchymal interaction during embryogenesis, such as the tooth. Two of these genes, Msx-1 and Msx-2, are key factors for the development of tooth and craniofacial skeleton. Msx-1 also down-regulates a master gene of skeletal cells differentiation. Msx-1 and Msx-2 contribute to the initial patterning of dentition as well as playing a pivotal role in terminal cell differentiation. In addition, Msx-1 and Msx-2 are expressed in the epidermis, hair follicles and fibroblasts of the developing fetal skin. In adult skin, Msx-1 and Msx-2 expression is confined to epithelially derived structures. Msx-2 is detected as a diffuse cytoplasmic signal in fetal epidermis and portions of the hair follicle and dermis, but is localized to the nucleus in the adult epidermis. Msx-1 and Msx-2 are also expressed during critical developmental stages of neural tube and neural crest, suggesting that these genes play an important role in organogenesis.

REFERENCES

1. Maas, R. and Bei, M. 1997. The genetic control of early tooth development. Crit. Rev. Oral Biol. Med. 8: 4-39.
2. Stelnicki, E.J., Komuves, L.G., Holmes, D., Clavin, W., Harrison, M.R., Adzick, N.S. and Largman, C. 1997. The human homeobox genes Msx-1, Msx-2, and MOX-1 are differentially expressed in the dermis and epidermis in fetal and adult skin. Differentiation 62: 33-41.
3. Foerst-Potts, L. and Sadler, T.W. 1997. Disruption of Msx-1 and Msx-2 reveals roles for these genes in craniofacial, eye, and axial development. Dev. Dyn. 209: 70-84.
4. Lezot, F., Thomas, B., Hotton, D., Forest, N., Orestes-Cardoso, S., Robert, B., Sharpe, P. and Berdal, A. 2000. Biomineralization, life-time of odontogenic cells and differential expression of the two homeobox genes Msx-1 and DLX-2 in transgenic mice. J. Bone Miner. Res. 15: 430-441.

CHROMOSOMAL LOCATIONS

Genetic locus: Msx1 (mouse) mapping to 5 B3.

SOURCE

Msx-1 (M-85) is a rabbit polyclonal antibody raised against amino acids 67-151 mapping near the N-terminus of Msx-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-15395 X, 200 µg/0.1 ml.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

Msx-1 (M-85) is recommended for detection of Msx-1 (also designated Hox-7) of mouse 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Msx-1 (M-85) is also recommended for detection of Msx-1 (also designated Hox-7) in additional species, including bovine and porcine.

Suitable for use as control antibody for Msx-1 siRNA (m): sc-149665, Msx-1 shRNA Plasmid (m): sc-149665-SH and Msx-1 shRNA (m) Lentiviral Particles: sc-149665-V.

Msx-1 (M-85) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Msx-1: 31 kDa.

Positive Controls: SP2/0 whole cell lysate: sc-364795.

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.

SELECT PRODUCT CITATIONS

1. Kam, K.Y., et al. 2005. Oct-1 and nuclear factor Y bind to the SURG-1 element to direct basal and gonadotropin-releasing hormone (GnRH)-stimulated mouse GnRH receptor gene transcription. Mol. Endoc. 19: 148-162.
2. Xiao, L. and Tsutsui, T. 2012. Three-dimensional epithelial and mesenchymal cell co-cultures form early tooth epithelium invagination-like structures: expression patterns of relevant molecules. J. Cell. Biochem. 113: 1875-1885.

PROTOCOLS

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