SANTA CRUZ BIOTECHNOLOGY, INC.

Msx-2 (M-70): sc-15396

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 downregulates 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.

CHROMOSOMAL LOCATION

Genetic locus: MSX2 (human) mapping to 5q35.2; Msx2 (mouse) mapping to 13 B1.

SOURCE

Msx-2 (M-70) is a rabbit polyclonal antibody raised against amino acids 51-120 of Msx-2 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-15396 X, 200 µg/0.1 ml.

APPLICATIONS

Msx-2 (M-70) is recommended for detection of Msx-2 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Msx-2 siRNA (h): sc-43946, Msx-2 siRNA (m): sc-43947, Msx-2 shRNA Plasmid (h): sc-43946-SH, Msx-2 shRNA Plasmid (m): sc-43947-SH, Msx-2 shRNA (h) Lentiviral Particles: sc-43946-V and Msx-2 shRNA (m) Lentiviral Particles: sc-43947-V.

Msx-2 (M-70) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Msx-2: 29 kDa.

Positive Controls: Msx-2 (h): 293 Lysate: sc-113166.

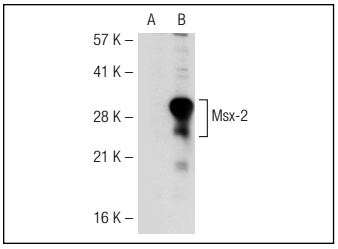
STORAGE

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.

DATA



Msx-2 (M-70): sc-15396. Western blot analysis of Msx-2 expression in non-transfected: sc-110760 (**A**) and human Msx-2 transfected: sc-113166 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fukumoto, S., et al. 2004. Ameloblastin is a cell adhesion molecule required for maintaining the differentiation state of ameloblasts. J. Cell Biol. 167: 973-983.
2. Wang, S., et al. 2011. Transcriptional regulation of bone sialoprotein gene by interleukin-11. Gene 476: 46-55.
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4. Cai, J., et al. 2011. Msx2 and Foxn1 regulate nail homeostasis. Genesis 49: 449-459.
5. Lai, C.F., 2012. TNFR1-activated reactive oxidative species signals up-regulate osteogenic Msx2 programs in aortic myofibroblasts. Endocrinology 153: 3897-3910.
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7. Zhou, L., et al. 2013. Transcriptional regulation of the human bone sialoprotein gene by fibroblast growth factor 2. J. Oral Sci. 55: 63-70.
8 Ophelia, V., et al. 2013. Human induced pluripotent stem cell-derived ectodermal precursor cells contribute to hair follicle morphogenesis *in vivo*. J. Invest. Dermatol. 133: 1479-1488.
9. Richter, A., et al. 2014. BMP4 promotes EMT and mesodermal commitment in human embryonic stem cells via SLUG and MSX2. Stem Cells 32: 636-648.