SANTA CRUZ BIOTECHNOLOGY, INC.

# Msx-2 (F-6): sc-365232

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., et al. 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., et al. 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 LOCATION

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

## SOURCE

Msx-2 (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 91-119 within an internal region of Msx-2 of human origin.

## PRODUCT

Each vial contains 200 µg IgM kappa light chain 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-365232 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-365232 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

Msx-2 (F-6) is recommended for detection of Msx-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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-2 (F-6) is also recommended for detection of Msx-2 in additional species, including equine, bovine and porcine.

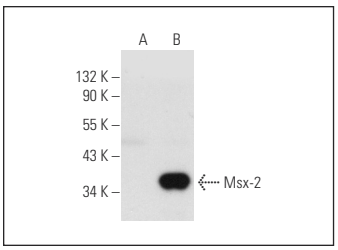
Suitable for use as control antibody for Msx-2 siRNA (h): sc-43946, Msx-2 siRNA (m): sc-43947, Msx-2 shRNA Plasmid (h): sc-43946-SH, Msx-2 shRNA Plasmid (m): sc-43947-SH, Msx-2 shRNA (h) Lentiviral Particles: sc-43946-V and Msx-2 shRNA (m) Lentiviral Particles: sc-43947-V.

Msx-2 (F-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

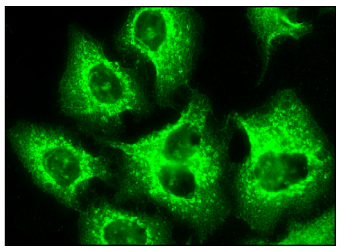
Molecular Weight of Msx-2: 29 kDa.

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

## DATA




Msx-2 (F-6): sc-365232. 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.



Msx-2 (F-6): sc-365232. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS


1. Kee, H.J., et al. 2014. Gallic acid inhibits vascular calcification through the blockade of BMP2-Smad1/5/8 signaling pathway. Vascul. Pharmacol. 63: 71-78.
2. Yuan, H., et al. 2019. MicroRNA let-7c-5p promotes osteogenic differentiation of dental pulp stem cells by inhibiting lipopolysaccharide-induced inflammation via HMGA2/PI3K/Akt signal blockade. Clin. Exp. Pharmacol. Physiol. 46: 389-397.
3. Wiegering, A., et al. 2019. GLI3 repressor but not GLI3 activator is essential for mouse eye patterning and morphogenesis. Dev. Biol. 450: 141-154.
4. Song, Y., et al. 2022. Iron overload impairs renal function and is associated with vascular calcification in rat aorta. Biometals. E-published.


## RESEARCH USE

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