SANTA CRUZ BIOTECHNOLOGY, INC.

OSX (M-15): sc-22538

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Osterix (OSX) is a zinc finger-containing transcriptional activator that is distinctly expressed in all developing bones and is important for osteoblast differentiation. In particular, OSX is implicated in the differentiation of osteoblasts, which are the specialized cells of bone formation. OSX is a nuclear protein that binds to GC box promoters elements and activates mRNA synthesis from genes containing functional recognition sites. The periosteal and mesenchymal cells of the membranous skeletal elements of OSX^- mice fail to differentiate into osteoblasts. Subsequently, the mesenchymal cells of OSX^- mice fail to deposit bone matrix and do not form bone. Cox-2 deficiency correlates with a decrease in OSX expression, suggesting that Cox-2 may induce OSX to mediate skeletal repair.

CHROMOSOMAL LOCATION

Genetic locus: SP7 (human) mapping to 12q13.13; Sp7 (mouse) mapping to 15 F3.

SOURCE

OSX (M-15) is available as either goat (sc-22538) or rabbit (sc-22538-R) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of OSX of human origin.

PRODUCT

Each vial contains either 100 µg (sc-22538) or 200 µg (sc-22538-R) 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-22538 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-22538 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OSX (M-15) is recommended for detection of OSX 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).

OSX (M-15) is also recommended for detection of OSX in additional species, including equine and bovine.

Suitable for use as control antibody for OSX siRNA (h): sc-43984, OSX siRNA (m): sc-45909, OSX shRNA Plasmid (h): sc-43984-SH, OSX shRNA Plasmid (m): sc-45909-SH, OSX shRNA (h) Lentiviral Particles: sc-43984-V and OSX shRNA (m) Lentiviral Particles: sc-45909-V.

OSX (M-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

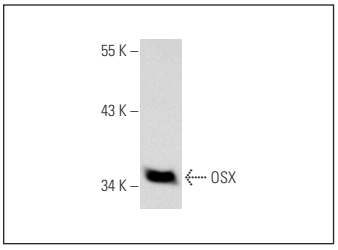
Molecular Weight of OSX: 45 kDa.

Positive Controls: HOS cell lysate: sc-2275.

STORAGE

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

DATA



OSX (M-15): sc-22538. Western blot analysis of OSX expression in HOS whole cell lysate.

SELECT PRODUCT CITATIONS

1. Klees, R.F., et al. 2008. Dissection of the osteogenic effects of laminin-332 utilizing specific LG domains: LG3 induces osteogenic differentiation, but not mineralization. Exp. Cell Res. 314: 763-773.
2. Kato, S., et al. 2009. Bone morphogenetic protein-2 induces the differentiation of a mesenchymal progenitor cell line, ROB-C26, into mature osteoblasts and adipocytes. Life Sci. 84: 302-310.
3. Lin, L., et al. 2010. Glucocorticoid-induced differentiation of primary cultured bone marrow mesenchymal cells into adipocytes is antagonized by exogenous Runx2. APMIS 118: 595-605.
4. Yang, L., et al. 2010. Kaempferol stimulates bone sialoprotein gene transcription and new bone formation. J. Cell. Biochem. 110: 1342-1355.
5. Mikami, Y., et al. 2011. Dexamethasone modulates osteogenesis and adipogenesis with regulation of osterix expression in rat calvaria-derived cells. J. Cell. Physiol. 226: 739-748.
6. McKenzie, J.A. and Silva, M.J. 2011. Comparing histological, vascular and molecular responses associated with woven and lamellar bone formation induced by mechanical loading in the rat ulna. Bone 48: 250-258.
7. Lee, D.S., et al. 2011. Crosstalk between nuclear factor I-C and transforming growth factor-β1 signaling regulates odontoblast differentiation and homeostasis. PLoS ONE 6: e29160.

RESEARCH USE

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