SANTA CRUZ BIOTECHNOLOGY, INC.

OSX (A-13)-R: sc-22536-R

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.

REFERENCES

1. Nakashima, K., et al. 2002. The novel zinc finger-containing transcription factor osterix is required for osteoblast differentiation and bone formation. Cell 108: 17-29.
2. Yagi, K., et al. 2003. Bone morphogenetic protein-2 enhances osterix gene expression in chondrocytes. J. Cell. Biochem. 88: 1077-1083.
3. Lee, M.H., et al. 2003. BMP-2-induced osterix expression is mediated by Dlx5 but is independent of Runx2. Biochem. Biophys. Res. Commun. 309: 689-694.
4. Huang, L., et al. 2004. Expression of preosteoblast markers and Cbfa-1 and osterix gene transcripts in stromal tumour cells of giant cell tumour of bone. Bone 34: 393-401.

CHROMOSOMAL LOCATION

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

SOURCE

OSX (A-13)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of OSX of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-22536 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-22536 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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

OSX (A-13)-R 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), 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 (A-13)-R is also recommended for detection of OSX in additional species, including equine, canine, bovine and porcine.

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 (A-13) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of OSX: 45 kDa.

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) 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. Matsushita, T., et al. 2009. Extracellular signal-regulated kinase 1 (ERK1) and ERK2 play essential roles in osteoblast differentiation and in supporting osteoclastogenesis. Mol. Cell. Biol. 29: 5843-5857.
2. Li, K.L., et al. 2012. p53 negatively regulates the osteogenic differentiation of vascular smooth muscle cells in mice with chronic kidney disease. Cardiovasc. J. Afr. 23: e1-e9.
3. Xu, F., et al. 2012. Essential role of ARID2 protein-containing SWI/SNF complex in tissue-specific gene expression. J. Biol. Chem. 287: 5033-5041.
4. Wang, L., et al. 2013. Identification of a clonally expanding haematopoietic compartment in bone marrow. EMBO J. 32: 219-230.
5. Stewart, S., et al. 2014. Sequential and opposing activities of Wnt and BMP coordinate zebrafish bone regeneration. Cell Rep. 6: 482-498.