

OSX (E-6): sc-393060

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.

CHROMOSOMAL LOCATION

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

SOURCE

OSX (E-6) is a mouse monoclonal antibody raised against amino acids 172-268 mapping within an internal region of OSX of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

OSX (E-6) is recommended for detection of OSX 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).

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.

Molecular Weight of OSX: 45 kDa.

Positive Controls: TF-1 cell lysate: sc-2412 or HOS cell lysate: sc-2275.

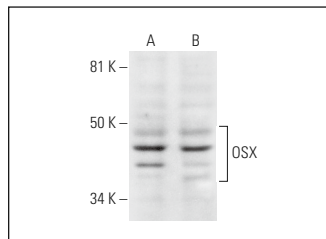
STORAGE

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

RESEARCH USE

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

DATA



OSX (E-6): sc-393060. Western blot analysis of OSX expression in TF-1 (A) and HOS (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Xiao, Z.F., et al. 2018. Osteoporosis of the vertebra and osteochondral remodeling of the endplate causes intervertebral disc degeneration in ovariectomized mice. *Arthritis Res. Ther.* 20: 207.
2. Yao, Z., et al. 2019. Reduced PDGF-AA in subchondral bone leads to articular cartilage degeneration after strenuous running. *J. Cell. Physiol.* 234: 17946-17958.
3. Guo, T., et al. 2019. Cbfa1 hinders autophagy by DSPP upregulation in odontoblast differentiation. *Int. J. Biochem. Cell Biol.* 115: 105578.
4. Chen, B., et al. 2020. Abnormal expression of miR-135b-5p in bone tissue of patients with osteoporosis and its role and mechanism in osteoporosis progression. *Exp. Ther. Med.* 19: 1042-1050.
5. Xiao, Z.F., et al. 2020. Mechanics and biology interact in intervertebral disc degeneration: a novel composite mouse model. *Calcif. Tissue Int.* 106: 401-414.
6. Hu, Y., et al. 2020. Defactinib attenuates osteoarthritis by inhibiting positive feedback loop between H-type vessels and MSCs in subchondral bone. *J. Orthop. Translat.* 24: 12-22.
7. Oh, Y., et al. 2020. Blue mussel-derived peptides PIISVYWK and FSVVPSPK trigger Wnt/β-catenin signaling-mediated osteogenesis in human bone marrow mesenchymal stem cells. *Mar. Drugs* 18: 510.
8. Oh, Y., et al. 2020. Anti-osteoporotic effects of antioxidant peptides PIISVYWK and FSVVPSPK from *Mytilus edulis* on ovariectomized mice. *Antioxidants* 9: 866.
9. Oh, Y., et al. 2020. Ark shell protein-derived bioactive peptides promote osteoblastic differentiation through upregulation of the canonical Wnt/β-catenin signaling in human bone marrow-derived mesenchymal stem cells. *J. Food Biochem.* 44: e13440.



See **OSX (F-3): sc-393325** for OSX antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.