SANTA CRUZ BIOTECHNOLOGY, INC.

ROR2 (HX07): sc-80329

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The Power to Question

BACKGROUND

ROR2 (receptor tyrosine kinase-like orphan receptor 2), also known as neurotrophic tyrosine kinase receptor-related 2 (NTRKR2), is a single pass transmembrane tyrosine-protein kinase receptor. It contains a cytoplasmic tyrosine kinase domain, distally located serine-threonine-rich domains, an extracellular immunoglobulin-like domain, a cysteine-rich domain and a kringle domain. ROR2 is important for skeletal and endocrine development and is required for cartilage and growth plate development. It promotes the differentiation of osteoblasts and plays an important role in the early formation of chondrocytes. ROR2 sequesters and associates with Dlxin-1 affecting the transcriptional function of Msx-2. ROR2 also interacts with canoncial Wnt-1 and Wnt-3, regulating their signaling pathways. Defects in ROR2 can result in the autosomal dominant skeletal disorder, brachydactyly type B1, or the autosomal recessive skeletal disorder, Robinow syndrome.

REFERENCES

1. Schwabe, G.C., et al. 2000. Distinct mutations in the receptor tyrosine kinase gene ROR2 cause brachydactyly type B. Am. J. Hum. Genet. 67: 822-831.
2. Afzal, A.R., et al. 2000. Recessive Robinow syndrome, allelic to dominant brachydactyly type B, is caused by mutation of ROR2. Nat. Genet. 25: 419-422.
3. Oishi, I., et al. 2003. The receptor tyrosine kinase ROR2 is involved in non-canonical Wnt-5a/JNK signalling pathway. Genes Cells 8: 645-654.
4. Matsuda,T., et al. 2003. The receptor tyrosine kinase ROR2 associates with the melanoma-associated antigen (MAGE) family protein Dlxin-1 and regulates its intracellular distribution. J. Biol. Chem. 278: 29057-29064.
5. Afzal, A.R. and Jeffery, S. 2003. One gene, two phenotypes: ROR2 mutations in autosomal recessive Robinow syndrome and autosomal dominant brachydactyly type B. Hum. Mutat. 22: 1-11.
6. Billiard, J., et al. 2004. The orphan receptor tyrosine kinase ROR2 modulates canonical Wnt signaling in osteoblastic cells. Mol. Endocrinol. 19: 90-101.
7. Paganoni, S. and Ferreira, A. 2005. Neurite extension in central neurons: a novel role for the receptor tyrosine kinases ROR1 and ROR2. J. Cell Sci. 118: 433-446.
8. Lehmann, K., et al. 2007. A new subtype of brachydactyly type B caused by point mutations in the bone morphogenetic protein antagonist Noggin. Am. J. Hum. Genet. 81: 388-396.
9. Liu, Y., et al. 2007. The orphan receptor tyrosine kinase ROR2 promotes osteoblast differentiation and enhances *ex vivo* bone formation. Mol. Endocrinol. 21: 376-387.

CHROMOSOMAL LOCATION

Genetic locus: ROR2 (human) mapping to 9q22.31.

SOURCE

ROR2 (HX07) is a mouse monoclonal antibody raised against an extracellular domain of ROR2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

ROR2 (HX07) is recommended for detection of ROR2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000); non cross-reactive with ROR1.

Suitable for use as control antibody for ROR2 siRNA (h): sc-72390, ROR2 shRNA Plasmid (h): sc-72390-SH and ROR2 shRNA (h) Lentiviral Particles: sc-72390-V.

Molecular Weight of ROR2: 120 kDa.

SELECT PRODUCT CITATIONS

1. Li, L., et al. 2014. Epigenetic identification of receptor tyrosine kinase-like orphan receptor 2 as a functional tumor suppressor inhibiting β-catenin and AKT signaling but frequently methylated in common carcinomas. Cell. Mol. Life Sci. 71: 2179-2192.
2. Arora, R., et al. 2014. Novel domains of expression for orphan receptor tyrosine kinase ROR2 in the human and mouse reproductive system. Dev. Dyn. 243: 1037-1045.
3. Saji, T., et al. 2018. Critical role of the ROR-family of receptor tyrosine kinases in invasion and proliferation of malignant pleural mesothelioma cells. Genes Cells 23: 606-613.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.