

RUNX2 (F-2): sc-390351



The Power to Question

BACKGROUND

The mammalian Runt-related transcription factor (RUNX) family comprises three members, RUNX1 (also designated AML-1, PEBP2 α B, CBFA2), RUNX2 (also designated AML-3, PEBP2 α A, CBFA1, Osf2) and RUNX3 (also designated AML-2, PEBP α C, CBFA3). RUNX family members are DNA-binding proteins that regulate the expression of genes involved in cellular differentiation and cell cycle progression. RUNX2 is essential for skeletal mineralization in that it stimulates osteoblast differentiation of mesenchymal stem cells, promotes chondrocyte hypertrophy and contributes to endothelial cell migration and vascular invasion of developing bones. Regulating RUNX2 expression may be a useful therapeutic tool for promoting bone formation. Mutations in the C-terminus of RUNX2 are associated with cleidocranial dysplasia syndrome, an autosomal-dominant skeletal dysplasia syndrome that is characterized by widely patent calvarial sutures, clavicular hypoplasia, supernumerary teeth, and short stature.

REFERENCES

1. Kamachi, Y., et al. 1990. Purification of a mouse nuclear factor that binds to both the A and B cores of the polyomavirus enhancer. *J. Virol.* 64: 4808-4819.
2. Ogawa, E., et al. 1993. PEBP2/PEA2 represents a family of transcription factors homologous to the products of the *Drosophila* runt gene and the human AML1 gene. *Proc. Natl. Acad. Sci. USA* 90: 6859-6863.

CHROMOSOMAL LOCATION

Genetic locus: RUNX2 (human) mapping to 6p21.1; Runx2 (mouse) mapping to 17 B3.

SOURCE

RUNX2 (F-2) is a mouse monoclonal antibody raised against amino acids 294-363 of RUNX2 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ 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-390351 X, 200 μ g/0.1 ml.

RUNX2 (F-2) is available conjugated to agarose (sc-390351 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390351 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390351 PE), fluorescein (sc-390351 FITC), Alexa Fluor[®] 488 (sc-390351 AF488), Alexa Fluor[®] 546 (sc-390351 AF546), Alexa Fluor[®] 594 (sc-390351 AF594) or Alexa Fluor[®] 647 (sc-390351 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390351 AF680) or Alexa Fluor[®] 790 (sc-390351 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

RUNX2 (F-2) is recommended for detection of RUNX2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RUNX2 (F-2) is also recommended for detection of RUNX2 in additional species, including equine, bovine and porcine.

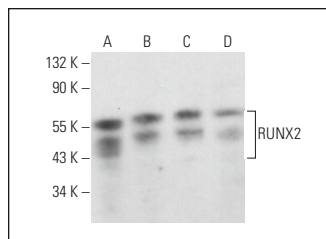
Suitable for use as control antibody for RUNX2 siRNA (h): sc-37145, RUNX2 siRNA (m): sc-37146, RUNX2 siRNA (r): sc-156088, RUNX2 shRNA Plasmid (h): sc-37145-SH, RUNX2 shRNA Plasmid (m): sc-37146-SH, RUNX2 shRNA Plasmid (r): sc-156088-SH, RUNX2 shRNA (h) Lentiviral Particles: sc-37145-V, RUNX2 shRNA (m) Lentiviral Particles: sc-37146-V and RUNX2 shRNA (r) Lentiviral Particles: sc-156088-V.

RUNX2 (F-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

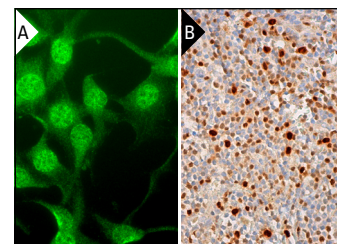
Molecular Weight of RUNX2: 55 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, c4 whole cell lysate: sc-364186 or AT3B-1 whole cell lysate: sc-364372.

DATA



RUNX2 (F-2): sc-390351. Western blot analysis of RUNX2 expression in NIH/3T3 (A), c4 (B), AT3B-1 (C) and PC-3 (D) whole cell lysates.



RUNX2 (F-2): sc-390351. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of subset of cells in non-germinal center (B).

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. Liu, Q., et al. 2018. miR-98-5p promotes osteoblast differentiation in MC3T3-E1 cells by targeting CKIP-1. *Mol. Med. Rep.* 17: 4797-4802.
3. Guo, L., et al. 2019. Ipriflavone attenuates the degeneration of cartilage by blocking the Indian hedgehog pathway. *Arthritis Res. Ther.* 21: 109.

RESEARCH USE

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