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Anti-RUNX2 Antibody Picoband®

Catalog Number: PB9158

About RUNX2

Core binding factor A1 (CBFA1/RUNX2) is a runt-like transcription factor essential for osteoblast differentiation. This protein is a member of the RUNX family of transcription factors and has a Runt DNA-binding domain. It is essential for osteoblastic differentiation and skeletal morphogenesis and acts as a scaffold for nucleic acids and regulatory factors involved in skeletal gene expression. RUNX2 plays a non-redundant role for Cbfa1 in tooth development that may be distinct from that in bone formation. In odontogenesis, RUNX2 is not involved in the early signaling networks regulating tooth initiation and early morphogenesis but regulates key epithelial-mesenchymal interactions that control advancing morphogenesis and histodifferentiation of the epithelial enamel organ.

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Overview

Product Name	Anti-RUNX2 Antibody Picoband®
Reactive Species	Human
Description	Boster Bio Anti-RUNX2 Antibody Picoband® catalog # PB9158. Tested in IF, ICC, WB applications. This antibody reacts with Human. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	IF, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9 mg NaCl, 0.2 mg Na2HPO4, and 0.05 mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	Q13950

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Technical Details

Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human RUNX2, identical to the related mouse sequence.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti- Rabbit IgG Super Vision Assay Kit (SV0002-1) for ICC.
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human Immunocytochemistry/Immunofluorescence, 5ug/ml, Human

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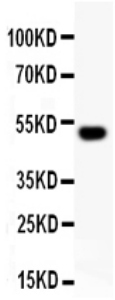
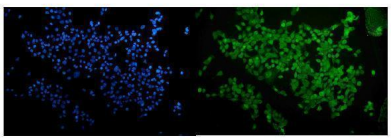
Anti-RUNX2 Antibody Picoband® (PB9158) Images



Western blot analysis of RUNX2 using anti-RUNX2 antibody (PB9158). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. Lane 1: recombinant human RUNX2 protein 0.5 ng. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-RUNX2 antigen affinity purified polyclonal antibody (Catalog # PB9158) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for RUNX2 at approximately 50 kDa. The expected band size for RUNX2 is at 50 kDa.



Western blot analysis of RUNX2 using anti-RUNX2 antibody (PB9158). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human Hela whole cell lysates, Lane 2: human A431 whole cell lysates, Lane 3: human K562 whole cell lysates, Lane 4: human Jurkat whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-RUNX2 antigen affinity purified polyclonal antibody (Catalog # PB9158) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for RUNX2 at approximately 56 kDa. The expected band size for RUNX2 is at 57 kDa.



IF analysis of RUNX2 using anti-RUNX2 antibody (PB9158). RUNX2 was detected in immunocytochemical section of A431 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5ug/mL rabbit anti-RUNX2 Antibody (PB9158) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

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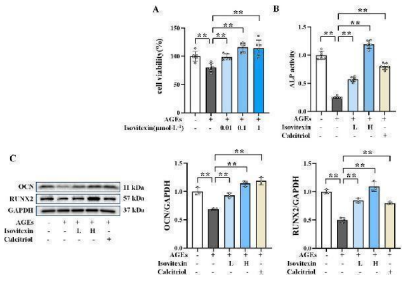
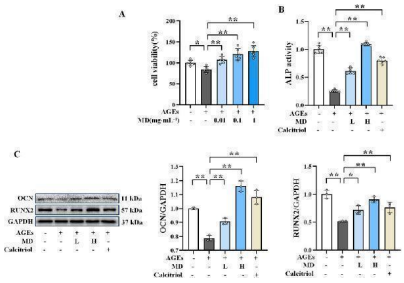
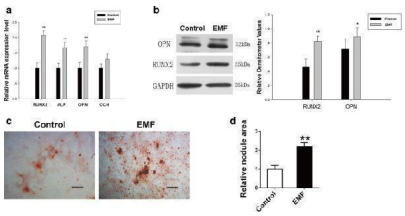


Protective effect of isovitexin on AGEs-induced osteoblasts. (A) Effect of isovitexin on the survival rate of osteoblasts (n = 6); (B) ALP activity in osteoblasts (n = 6); (C) Western blotting results of OCN and RUNX2 in osteoblasts (n = 3). ** P < 0.01.Source: Xiaoqin Zhang et al. Licensed under CC BY 4.0. PMID: 39525628



Protective effect of MD on AGEs-induced osteoblasts. (A) Effect of MD on the survival rate of osteoblasts (n = 6); (B) ALP activity in osteoblasts (n = 6); (C) Western blotting results of OCN and RUNX2 in osteoblasts (n = 3). * P < 0.05; ** P < 0.01.Source: Xiaoqin Zhang et al. Licensed under CC BY 4.0. PMID: 39525628



BMSCs pretreated with EMF exhibited stronger osteogenic differentiation potential. a RUNX2, ALP, OPN, and OCN mRNA levels of two groups analyzed by RT-PCR. GAPDH used as loading control for quantification (n = 3). b Expression of OPN and RUNX2 proteins of both groups determined by western blot analysis. Relative densitometer values quantified by ImageJ software, GAPDH used as internal control (n = 3). c Images of Alizarin Red S staining exhibited plaques of calcified extracellular matrix of both groups. Scale bar = 100 um. d Semi-quantitative analysis of Alizarin Red S staining among both groups (n = 6). Data shown as mean ± SD. * P < 0.05, ** P < 0.01. EMF electromagnetic field Source: Chang Tu et al. Licensed under CC BY 4.0. PMID: 30092831

11 Publications Citing This Product

1. PubMed ID: 32018039, Chen G,Wang Q,Li Z,Yang Q,Liu Y,Du Z,Zhang G,Song Y.Circular RNA CDR1as promotes adipogenic and suppresses osteogenic differentiation of BMSCs in steroid-induced osteonecrosis of the femoral head.Bone.2020 Apr;133:115258.doi:10.1016/j.bone.2020.115258.Epu

2. PubMed ID: 24421074, Li Jp, Chen S, Peng H, Zhou Jl, Fang Hs. Bioelectromagnetics. 2014 Apr;35(3):170-80. Doi: 10.1002/Bem.21833. Epub 2014 Jan 14. Pulsed Electromagnetic Fields Protect The Balance Between Adipogenesis And Osteogenesis On Steroid-Induced Osteonecrosis...

3. PubMed ID: 24068522, Song My, Yu Jz, Zhao Dm, Wei S, Liu Y, Hu Ym, Zhao Wc, Yang Y, Wu H. Cell Biochem Biophys. 2014 May;69(1):47-54. Doi: 10.1007/S12013-013-9764-8. The Time-Dependent Manner Of Sinusoidal Electromagnetic Fields On Rat Bone Marrow Mesenchymal Stem Cel...

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