abcam

Product datasheet

Anti-RUNX2 antibody [EPR14334] ab192256

Recombinant RabMAb

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Overview

Product name	Anti-RUNX2 antibody [EPR14334]
Description	Rabbit monoclonal [EPR14334] to RUNX2
Host species	Rabbit
Tested applications	**Suitable for:** IHC-P, ICC/IF, Flow Cyt (Intra), ChIC/CUT&RUN-seq
Species reactivity	**Reacts with:** Mouse, Human **Predicted to work with:** Rat
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	Human osteosarcoma, Human tonsil and Mouse spleen tissues; Saos-2 and PC cells.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: 40% Glycerol, 59% PBS, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR14334
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab192256 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★☆ **(5)**	1/1000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
ICC/IF		1/1000. **For unpurified use at 1/500.**
Flow Cyt (Intra)		1/50.
ChIC/CUT&RUN-seq		Use at an assay dependent concentration.

Target

Function Transcription factor involved in osteoblastic differentiation and skeletal morphogenesis. Essential for the maturation of osteoblasts and both intramembranous and endochondral ossification. CBF binds to the core site, 5'-PYGPYGGT-3', of a number of enhancers and promoters, including murine leukemia virus, polyomavirus enhancer, T-cell receptor enhancers, osteocalcin, osteopontin, bone sialoprotein, alpha 1(I) collagen, LCK, IL-3 and GM-CSF promoters (By similarity). Inhibits MYST4-dependent transcriptional activation.

Tissue specificity Specifically expressed in osteoblasts.

Involvement in disease Defects in RUNX2 are the cause of cleidocranial dysplasia (CLCD) [MIM:119600]; also known as cleidocranial dysostosis (CCD). CLCD is an autosomal dominant skeletal disorder with high penetrance and variable expressivity. It is due to defective endochondral and intramembranous bone formation. Typical features include hypoplasia/aplasia of clavicles, patent fontanelles, wormian bones (additional cranial plates caused by abnormal ossification of the calvaria), supernumerary teeth, short stature, and other skeletal changes. In some cases defects in RUNX2 are exclusively associated with dental anomalies.

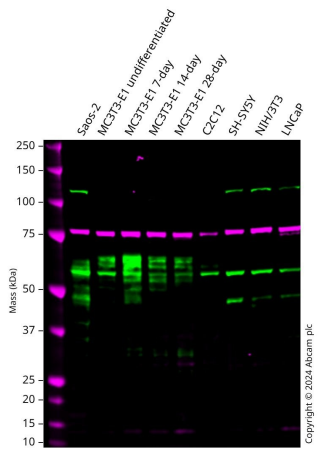
Sequence similarities Contains 1 Runt domain.

Domain A proline/serine/threonine rich region at the C-terminus is necessary for transcriptional activation of target genes and contains the phosphorylation sites.

Post-translational modifications Phosphorylated; probably by MAP kinases (MAPK) (By similarity). Isoform 3 is phosphorylated on Ser-340.

Cellular localization Nucleus.

Images



Western blot - Anti-RUNX2 antibody [EPR14334] (ab192256)

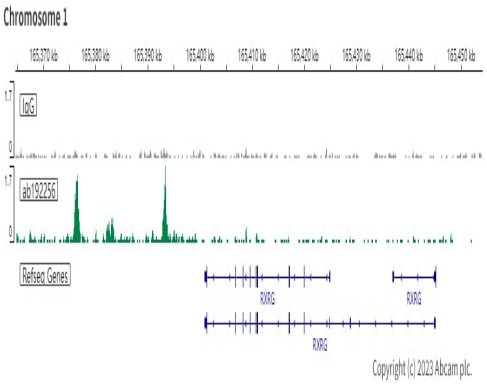
All lanes : Anti-RUNX2 antibody [EPR14334] (ab192256) at 1/1000 dilution

Lane 1 : Saos-2 cell lysate
Lane 2 : MC3T3-E1 undifferentiated cell lysate
Lane 3 : MC3T3-E1 7-day Osteogenic differentiation cell lysate
Lane 4 : MC3T3-E1 14-day Osteogenic differentiation cell lysate
Lane 5 : MC3T3-E1 28-day Osteogenic differentiation cell lysate
Lane 6 : C2C12 cell lysate
Lane 7 : SH-SY5Y cell lysate
Lane 8 : NIH/3T3 cell lysate
Lane 9 : LNCaP cell lysate

Lysates/proteins at 20 µg per lane.

Observed band size: 60 kDa

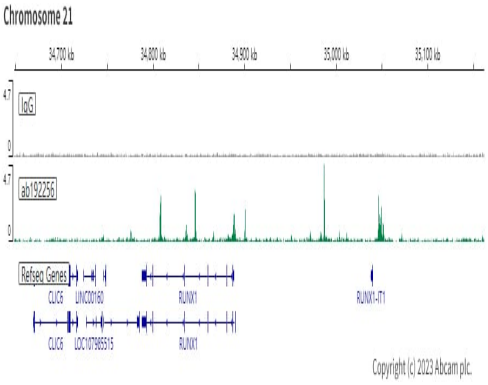
Western blot: Anti-RUNX2 antibody [EPR14334] (ab192256) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (**ab238078**) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab192256 was shown to bind specifically to RUNX2. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution



ChIC/CUT&RUN sequencing - Anti-RUNX2 antibody [EPR14334] (ab192256)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/µL, 2.5 x 10^5 Saos-2 cells and 5 µg of ab192256 [EPR14334]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control **ab172730** is also shown.

The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



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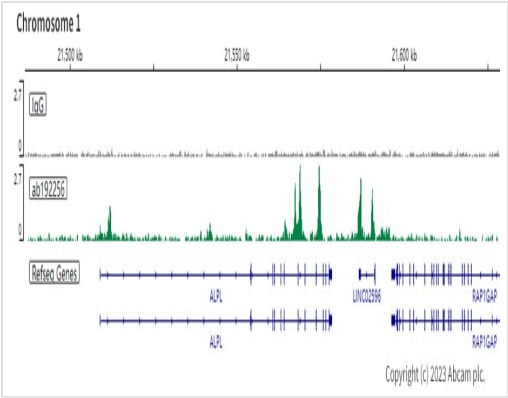

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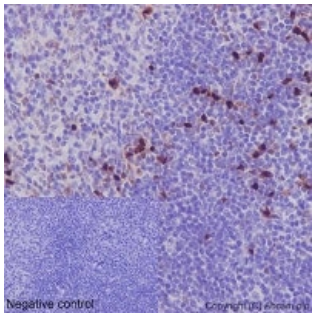
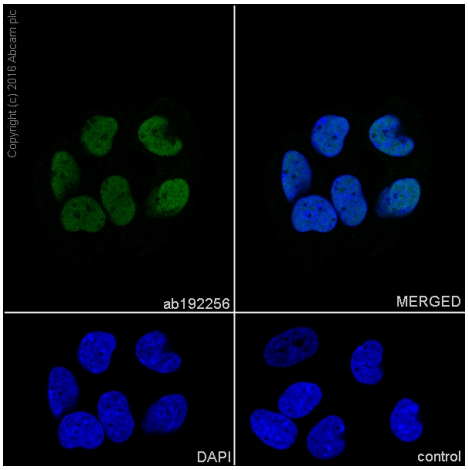


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RUNX2 antibody [EPR14334] (ab192256)

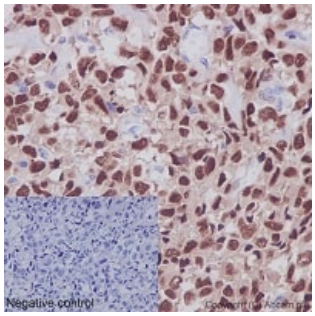
Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labeling RUNX2 with ab192256 at 1/1000 dilution. A ready to use HRP Polymer for Rabbit IgG was used as the secondary. Hematoxylin counterstain.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-RUNX2 antibody [EPR14334] (ab192256)

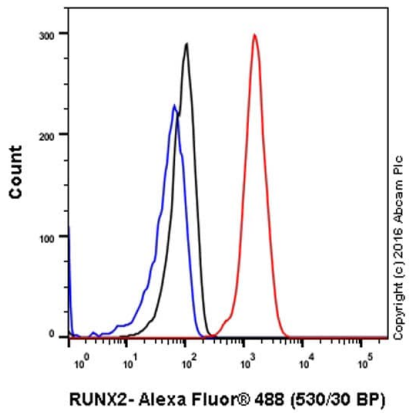
Immunocytochemistry/Immunofluorescence analysis of Saos-2 (Human osteosarcoma cell line) labeling RUNX2 with purified ab192256 at 1/1000 dilution. Cells were fixed with 4% PFA and permeabilized with 0.1% tritonX-100. **ab150077** Goat anti rabbit IgG (Alexa Fluor®488) at 1/1000 was used as the secondary antibody. Nuclei were counterstained with DAPI. PBS was used instead of the primary antibody as the negative control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RUNX2 antibody [EPR14334] (ab192256)

Immunohistochemical analysis of paraffin-embedded Human osteosarcoma tissue labeling RUNX2 with ab192256 at 1/1000 dilution. A ready to use HRP Polymer for Rabbit IgG was used as the secondary. Hematoxylin counterstain.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

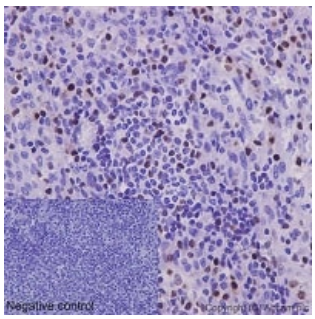


Flow Cytometry (Intracellular) - Anti-RUNX2 antibody [EPR14334] (ab192256)

ab192256 staining RUNX2 in PC-3 (human prostate adenocarcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde, permabilised with 90% methanol and the sample was incubated with the primary antibody at a dilution of 1/50. A goat anti rabbit IgG (Alexa Fluorr® 488) at a dilution of 1/2000 was used as the secondary antibody.

Isoytype control: Rabbit monoclonal IgG (Black)

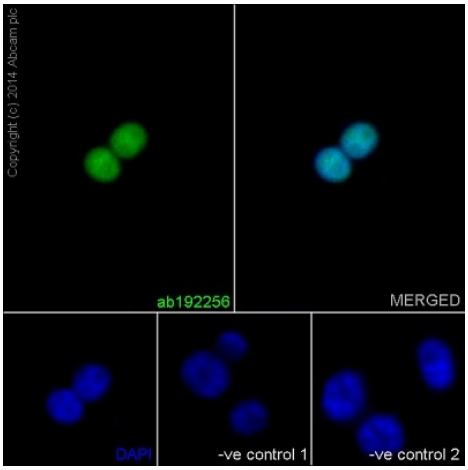
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RUNX2 antibody [EPR14334] (ab192256)

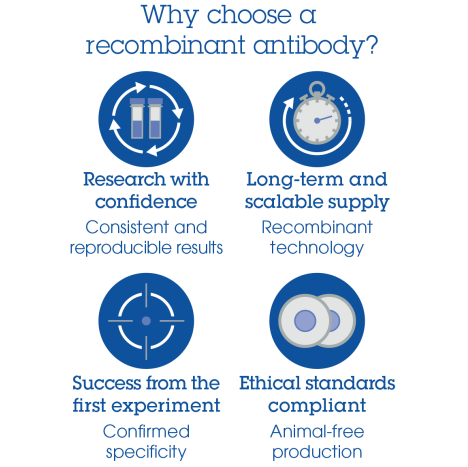
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling RUNX2 with ab192256 at 1/1000 dilution. A ready to use HRP Polymer for Rabbit IgG was used as the secondary. Hematoxylin counterstain.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-RUNX2 antibody [EPR14334] (ab192256)

Immunofluorescent analysis of 4% formaldehyde fixed PC3 cells labeling RUNX2 using ab192256 at a 1/500 dilution. A Goat anti rabbit IgG (Alexa Fluor®488) **ab150077** was used as the secondary at a 1/200 dilution. Counterstain DAPI. Permeabilized using 0.1% Triton X-100. The two negative controls: 1. Primary ab concentration (anti-RUNX2) is 1:500 dilution, Secondary ab (Goat anti mouse IgG (Alexa Fluor®594)) is 1:500 dilution; 2. Primary ab concentration (anti-RUNX2) is 1:500 dilution, Secondary ab (Goat anti mouse IgG (Alexa Fluor®594)) is 1:500 dilution.



Anti-RUNX2 antibody [EPR14334] (ab192256)

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