abcam

ab220117

Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR3099
Purification technique	Affinity purification Protein A
Concentration	0.946 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	The use of an HRP/AP polymerized secondary antibody will give a stronger signal.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information RUNX1

Function	Forms the heterodimeric complex core-binding factor (CBF) with CBFB. RUNX members modulate the transcription of their target genes through recognizing the core consensus binding sequence 5'-TGTGGT-3', or very rarely, 5'-TGCGGT-3', within their regulatory regions via their runt domain, while CBFB is a non-DNA-binding regulatory subunit that allosterically enhances the sequence-specific DNA-binding capacity of RUNX. The heterodimers bind to the core site of a number of enhancers and promoters, including murine leukemia virus, polyomavirus enhancer, T-cell receptor enhancers, LCK, IL3 and GM-CSF promoters (Probable). Essential for the development of normal hematopoiesis (PubMed:17431401). Acts synergistically with ELF4 to transactivate the IL-3 promoter and with ELF2 to transactivate the BLK promoter (PubMed:10207087, PubMed:14970218). Inhibits KAT6B-dependent transcriptional activation (By similarity). Involved in lineage commitment of immature T cell precursors. CBF complexes repress ZBTB7B transcription factor during cytotoxic (CD8+) T cell development. They bind to RUNX-binding sequence within the ZBTB7B locus acting as transcriptional silencer and allowing for cytotoxic T cell differentiation. CBF complexes binding to the transcriptional silencer is essential for recruitment of nuclear protein complexes that catalyze epigenetic modifications to establish epigenetic ZBTB7B silencing (By similarity). Controls the anergy and suppressive function of regulatory T-cells (Treg) by associating with FOXP3. Activates the expression of IL2 and IFNG and down-regulates the expression of TNFRSF18, IL2RA and CTLA4, in conventional T-cells (PubMed:17377532). Positively regulates the expression of RORC in T-helper 17 cells (By similarity). Isoform AML-1G shows higher binding activities for target genes and binds TCR-beta-E2 and RAG-1 target site with threefold higher affinity than other isoforms. It is less effective in the context of neutrophil terminal differentiation. Isoform AML-1L interferes with the transactivation activity of RUNX1.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab220117 is the carrier-free version of ab92336.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
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 batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	RUNX1 also known as AML1 along with RUNX2 and RUNX3 form a family of transcription factors that play a critical role in gene regulation. These proteins recognize specific DNA sequences through their Runt domain facilitating DNA binding and transcriptional activation or repression. RUNX1 is extensively studied having a mass of approximately 48 kDa. They are expressed in various tissues including hematopoietic cells osteoblasts and the central nervous system. RUNX proteins regulate genes involved in cell differentiation and proliferation.
Biological function summary	RUNX1 RUNX2 and RUNX3 control processes in development and differentiation. They often function as part of a transcriptional complex with CBFβ enhancing DNA binding and transcriptional activity. RUNX1 is vital in hematopoiesis guiding the formation of blood cells. RUNX2 predominantly influences bone development by regulating osteoblast differentiation while RUNX3 impacts neural development and T-cell maturation. These proteins collectively integrate signals to ensure proper cell lineage decisions.
Pathways	RUNX proteins participate in essential cellular pathways like the Wnt and TGF-β signaling pathways. The Wnt pathway involves interaction with β-catenin affecting cell fate and development processes. RUNX2 plays a significant role here by contributing to bone formation. The TGF-β pathway influences cell growth and differentiation by interacting with SMAD proteins primarily through RUNX3 which modulates immune responses and tumorigenesis. These pathways highlight RUNX proteins' critical integration in signaling networks.
Associated diseases and disorders	RUNX1 mutations associate with various hematological malignancies notably acute myeloid leukemia (AML). RUNX1 mutations disrupt normal hematopoiesis leading

to uncontrolled cell proliferation. RUNX2's dysregulation relates to cleidocranial dysplasia a skeletal disorder characterized by delayed bone development. Both RUNX1 and RUNX2 link to similar signaling pathways such as the Wnt pathway implicating them in these diseases' pathogenesis. Understanding RUNX proteins' role can lead to better diagnostic and therapeutic approaches for these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

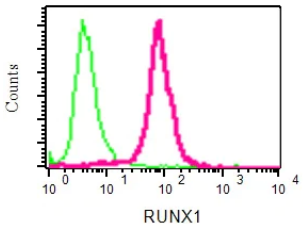
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

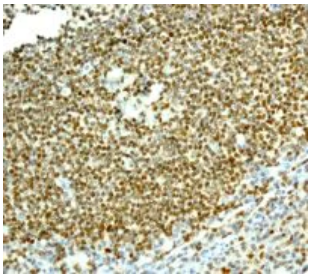
10 product images



Flow Cytometry (Intracellular) - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

RUNX1 / AML1 + RUNX3 + RUNX2 Flow Cytometry (Intracellular) staining using rabbit Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody

Intracellular flow cytometric analysis of permeabilized Molt-4 cells using anti-RUNX1 ab92336 (red) or a rabbit IgG (negative) (green). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).

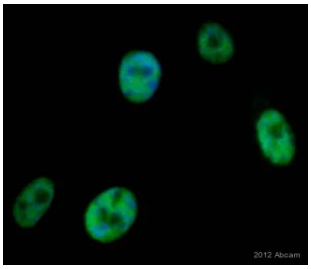


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

RUNX1 / AML1 + RUNX3 + RUNX2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody

Immunohistochemistry staining of RUNX1 / AML1 in formalin-fixed, paraffin-embedded Human tonsil tissue using 1/100 ab92336.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).

Perform heat mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

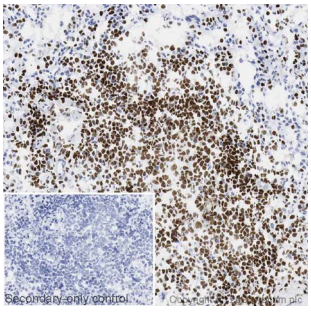


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

ab92336 staining RUNX1 / AML1 in human glioblastoma cell line by Immunocytochemistry/ Immunofluorescence.

Cells were fixed in paraformaldehyde, permeabilized using 0,1% Triton X 100 in PBS, blocked with 0.5% BSA for 30 minutes at room temperature and then incubated with ab92336 at a 1/50 dilution for 16 hours at 4°C. The secondary used was an Alexa-Fluor 488 conjugated goat anti-rabbit polyclonal used at a 1/400 dilution. Nuclei are counterstained with DAPI.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).

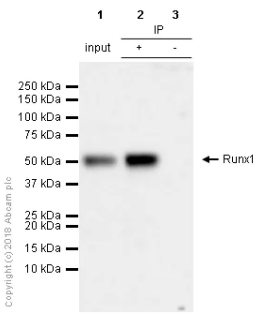


Immunohistochemistry (Frozen sections) - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

RUNX1 / AML1 + RUNX3 + RUNX2 Immunohistochemistry (Frozen sections) staining using rabbit Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab92336).
IHC image of RUNX1 / AML1 + RUNX3 + RUNX2 staining in a section of frozen normal human tonsil performed on a Leica BOND™ system using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab92336, 1/500 dilution, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

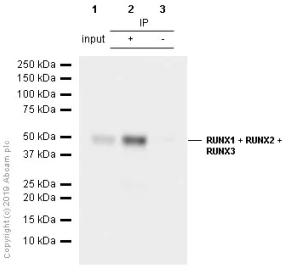


Immunoprecipitation - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

Lane 1 (input): MOLT-4 (Human lymphoblastic leukemia T lymphoblast) whole cell lysate, 10µg
Lane 2 (+): MOLT-4 whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab220117 in MOLT-4 whole cell lysate
ab220117 Immunoprecipitating RUNX1 / AML1 + RUNX3 + RUNX2 in MOLT-4 whole cell lysates. For western blotting, primary antibody used was ab220117 at 1:500 dilution (1.98 µg/ml). ab131366 VeriBlot for IP (HRP) was used for detection at 1:1000 dilution.

Blocking and diluting buffer: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

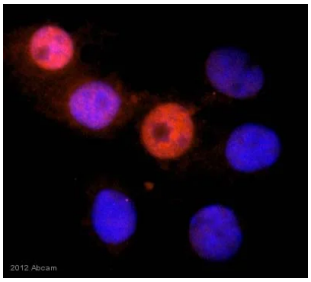


Immunoprecipitation - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

ab92336 (purified) at 1/50 immunoprecipitating RUNX1 / AML1 + RUNX3 + RUNX2 in 10 µg Molt-4 (Human lymphoblastic leukemia T lymphoblast) whole cell lysate (**Lanes 1 and 2**, observed at 49 kDa). **Lane 3** - Rabbit monoclonal IgG (ab172730) instead of ab92336 in Molt-4 whole cell lysate. For western blotting, ab220117 at 1/500 and HRP Veriblot for IP (ab131366) was used for detection at 1/1000 dilution.
Blocking/Dilution buffer and concentration: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).

All lanes:
Immunoprecipitation - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] (ab92336)

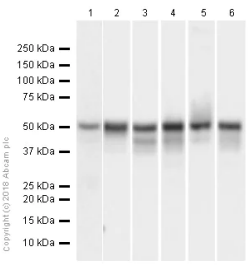


This image is courtesy of an anonymous customer review.

Immunocytochemistry/ Immunofluorescence - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

ab92336 staining RUNX1 / AML1 in rat glioblastoma cell line C6 by Immunocytochemistry/ Immunofluorescence.

Cells were fixed in paraformaldehyde, permeabilized using 0,1% Triton X 100 in PBS, blocked with 0.5% BSA for 30 minutes at room temperature and then incubated with ab92336 at a 1/50 dilution for 16 hours at 4°C. The secondary used was a Cy3 conjugated goat anti-rabbit polyclonal used at a 1/400 dilution. Nuclei are counterstained with DAPI.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).



Western blot - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

RUNX1 / AML1 + RUNX3 + RUNX2 Western blot staining using rabbit Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody

Blocking and diluting buffer: 5% NFDM/TBST
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).

All lanes:
Western blot - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] (ab92336) at 1.28 µg/mL

Lane 1:
Raw264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 2:
Molt-4 (Human lymphoblastic leukemia T lymphoblast) whole cell lysate at 20 µg

Lane 3:
WEHI-3 (Mouse leukemia lymphoblast) whole cell lysate at 20 µg

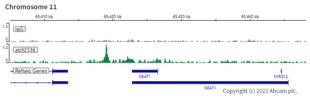
Lane 4:
Mouse thymus lysate at 20 µg

Lane 5:
CTLL-2 (Mouse T lymphocyte) whole cell lysate at 20 µg

Lane 6:
Rat thymus lysate at 20 µg

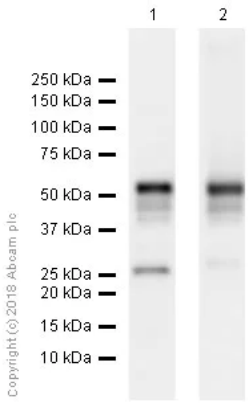
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 0.05 µg/mL



ChIC/CUT&RUN sequencing - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2.5 x 10^5 K-562 (Human chronic myelogenous leukemia lymphoblast) cells and 5µg of ab92336 [EPR3099]. 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. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).



Western blot - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] - BSA and Azide free (ab220117)

RUNX1 / AML1 + RUNX3 + RUNX2 Western blot staining using rabbit Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody

Blocking/Diluting buffer and concentration: 5% NFDM /TBST
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92336).

All lanes:
Western blot - Anti-RUNX1 / AML1 + RUNX3 + RUNX2 antibody [EPR3099] (ab92336) at 1.28 µg/mL

Lane 1:
Mouse spleen lysate at 20 µg

Lane 2:
Mouse thymus lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 0.05 µg/mL

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.