abcam

ab272456

Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR23309-113
Purification technique	Affinity purification Protein A
Concentration	0.55 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	5 µg
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ChIP

Tested

Species	Human
Dilution info	5 µg for 25 µg chromatin
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
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	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

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

Activity summary	RUNX1 also known as AML1 is a transcription factor with a molecular weight of approximately 48 kDa. It belongs to the Runt-related transcription factor family and plays a critical role in hematopoiesis. RUNX1 is expressed in hematopoietic stem cells and various other tissues where it regulates the expression of genes involved in the differentiation and proliferation of blood cells. It exerts its function by binding to specific DNA sequences thereby controlling the transcriptional activity necessary for normal hematopoietic development.
Biological function summary	RUNX1 is essential in the formation of blood cells and is part of the core-binding factor (CBF) complex. This complex is a heterodimer comprising RUNX1 and the CBFβ subunit. The interaction between RUNX1 and CBFβ stabilizes the DNA binding capability of RUNX1 facilitating the activation of target gene transcription. The proper functioning of RUNX1 is necessary for the maintenance of normal lineage specification of hematopoietic progenitors affecting both myeloid and lymphoid cell lineages.
Pathways	RUNX1 plays a significant role in the Wnt signaling pathway and the TGF-beta signaling pathway. RUNX1 interacts with several proteins in these pathways including SMAD proteins and β-catenin which are important for transmitting extracellular signals that regulate cell growth and differentiation. RUNX1's role in these pathways highlights its importance not only in hematopoiesis but also in preventing abnormal cell proliferation.

Associated diseases and disorders	RUNX1 mutations are strongly associated with acute myeloid leukemia (AML) and familial platelet disorder. In AML RUNX1 mutations disrupt normal hematopoiesis leading to the uncontrolled proliferation of immature blood cells. RUNX1-related proteins such as the GM-CSF receptor can contribute to disease progression by altering cytokine signaling. RUNX1's involvement in familial platelet disorder reflects its importance in maintaining normal blood cell counts and function as loss of RUNX1 function leads to predisposition to leukemia.

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

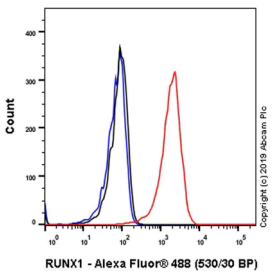
We do not recommend this combination. It is not covered by our product promise.

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.

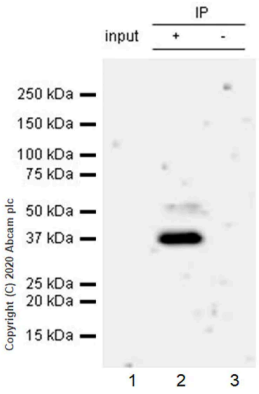
6 product images



Flow Cytometry (Intracellular) - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized Jurkat (Human T cell leukemia T lymphocyte) cells labelling RUNX1 / AML1 with ab272456 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

RUNX1 / AML1 was immunoprecipitated from K562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate with ab272456 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab272456 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: K562 whole cell lysate 10 µg

Lane 2: ab272456 IP in K562 whole cell lysate

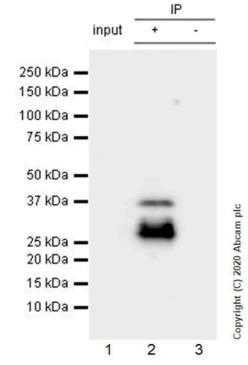
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab272456 in K562 whole cell lysate

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: 3 mins.

All lanes:
Immunoprecipitation - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

Predicted band size: 48 kDa



Immunoprecipitation - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

RUNX1 / AML1 was immunoprecipitated from 0.35 mg Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate with ab272456 at 1/30 dilution. Western blot was performed on the immunoprecipitate using ab272456 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate 20 ug

Lane 2: ab272456 IP in Jurkat whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab272456 in Jurkat whole cell lysate

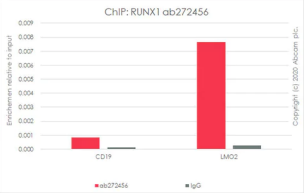
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 32 seconds.

All lanes:
Immunoprecipitation - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

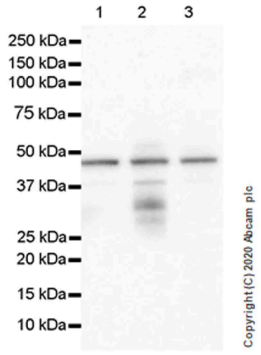
Predicted band size: 48 kDa

Observed band size: 27-38 kDa



ChIP - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

Chromatin was prepared from K-562 cells according to the Abcam Dual-X-ChIP protocol. Cells were fixed with 1.5 mM EGS for 30mins and then formaldehyde for 10min.
The ChIP was performed with 25 µg of chromatin, 5 µg of ab272456 (red), or 5 µg of rabbit normal IgG ab172730 (gray) and 20 µl of Protein A/G sepharose beads. The immunoprecipitated DNA was quantified by real time PCR (Taqman approach for active and inactive loci, Sybr green approach for heterochromatic loci).
Primers and probes are from paper PMID：20959602
The RUNX1 enrichment profile is consistent with what have been described in literature (PMID: 20959602).



Western blot - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

RUNX1 / AML1 Western blot staining using rabbit Anti-RUNX1 / AML1 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
RUNX1 has several isoforms. The molecular weight observed is consistent with what have been described in literature (PMID:17431130, 29296779).

Exposure time: 3 minutes

All lanes:
Western blot - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456) at 1/1000 dilution

Lane 1:
Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate at 20 µg

Lane 2:
MOLT-4 (human lymphoblastic leukemia t lymphoblast) whole cell lysate at 20 µg

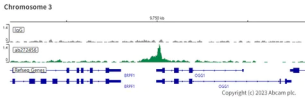
Lane 3:
THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 48 kDa

Observed band size: 27-48 kDa



ChIC/CUT&RUN sequencing - Anti-RUNX1 / AML1 antibody [EPR23309-113] - ChIP Grade (ab272456)

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 ab272456

[EPR23309-113]. 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 Support and downloads section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.

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