abcam

ab247283

Anti-CEBP Alpha/CEBPA antibody [EP708Y] - 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	EP708Y
Purification technique	Affinity purification Protein A
Specificity	This antibody recognizes isoform1 and isoform 4.
Concentration	1.027 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	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CEBPA

Function

Transcription factor that coordinates proliferation arrest and the differentiation of myeloid progenitors, adipocytes, hepatocytes, and cells of the lung and the placenta. Binds directly to the consensus DNA sequence 5'-T[TG]NNGNAA[TG]-3' acting as an activator on distinct target genes (PubMed:11242107). During early embryogenesis, plays essential and redundant functions with CEBPB. Essential for the transition from common myeloid progenitors (CMP) to granulocyte/monocyte progenitors (GMP). Critical for the proper development of the liver and the lung (By similarity). Necessary for terminal adipocyte differentiation, is required for postnatal maintenance of systemic energy homeostasis and lipid storage (By similarity). To regulate these different processes at the proper moment and tissue, interplays with other transcription factors and modulators. Down-regulates the expression of genes that maintain cells in an undifferentiated and proliferative state through E2F1 repression, which is critical for its ability to induce adipocyte and granulocyte terminal differentiation. Reciprocally E2F1 blocks adipocyte differentiation by binding to specific promoters and repressing CEBPA binding to its target gene promoters. Proliferation arrest also depends on a functional binding to SWI/SNF complex (PubMed:14660596). In liver, regulates gluconeogenesis and lipogenesis through different mechanisms. To regulate gluconeogenesis, functionally cooperates with FOXO1 binding to IRE-controlled promoters and regulating the expression of target genes such as PCK1 or G6PC1. To modulate lipogenesis, interacts and transcriptionally synergizes with SREBF1 in promoter activation of specific lipogenic target genes such as ACAS2. In adipose tissue, seems to act as FOXO1 coactivator accessing to ADIPOQ promoter through FOXO1 binding sites (By similarity). Isoform 3. Can act as dominant-negative. Binds DNA and have transctivation activity, even if much less efficiently than isoform 2. Does not inhibit cell proliferation (PubMed:14660596). Isoform 4. Directly and specifically enhances ribosomal DNA transcription interacting with RNA polymerase I-specific cofactors and inducing histone acetylation.

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

ab247283 is the carrier-free version of ab40761.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	CEBP Alpha also known as CEBPA is a transcription factor belonging to the CCAAT/enhancer-binding protein family. It is composed of a molecular mass approximately between 42 to 45 kDa and is characterized by the leucine zipper motif which contributes to its function in dimerization and DNA binding. CEBP Alpha is expressed in various tissues with notable expression in the liver adipose tissue and hematopoietic cells where it plays a significant role in regulating gene expression related to growth arrest and differentiation.
Biological function summary	CEBP Alpha regulates important cellular processes by acting as a transcriptional regulator. It participates in the control of cellular differentiation proliferation and metabolism. CEBP Alpha forms homo- or heterodimers with other proteins of the

	CEBP family to exert its functions. It induces expression of genes involved in differentiation of myeloid progenitors into granulocytes and macrophages. The protein also promotes adipogenesis by activating genes responsible for the development and function of adipocytes.
Pathways	CEBP Alpha participates actively in signaling pathways that involve cell cycle control and hematopoiesis. In the hematopoietic pathway CEBP Alpha influences the differentiation of progenitor cells into mature blood cells. Additionally it interacts with other proteins such as PU.1 an important regulator in the myeloid lineage and through the MAPK pathway influences growth arrest and differentiation responses. These interactions highlight its essential role in maintaining the balance between cell proliferation and differentiation.
Associated diseases and disorders	Alterations in the function or expression of CEBP Alpha have consequential links to acute myeloid leukemia (AML) and obesity. Mutations or disruptions in the CEBP Alpha gene can lead to impaired granulocyte differentiation contributing to the pathogenesis of AML. Additionally CEBP Alpha through its role in adipogenesis is associated with metabolic disorders such as obesity. The protein's interaction with other transcription factors like FLT3 and GATA-2 in the context of these diseases highlights its critical involvement in maintaining normal physiological functions.

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

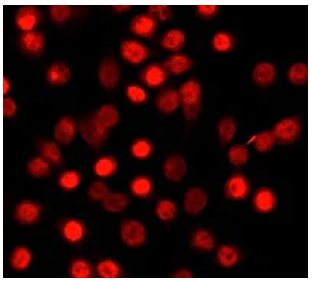
We do not recommend this combination. It is not covered by our product promise.

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.

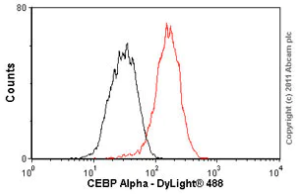
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-CEBP Alpha/CEBPA antibody [EP708Y] - BSA and Azide free (ab247283)

CEBP Alpha/CEBPA Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CEBP Alpha/CEBPA antibody

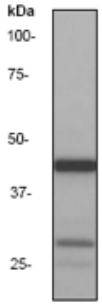
This data was developed using ab40761, the same antibody clone in a different buffer formulation.ab40761 (1/250) staining HeLa cells using immunofluorescence.



Flow Cytometry (Intracellular) - Anti-CEBP Alpha/CEBPA antibody [EP708Y] - BSA and Azide free (ab247283)

CEBP Alpha/CEBPA Flow Cytometry (Intracellular) staining using rabbit Anti-CEBP Alpha/CEBPA antibody

This data was developed using ab40761, the same antibody clone in a different buffer formulation. Overlay histogram showing HeLa cells stained with ab40761 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab40761, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Western blot - Anti-CEBP Alpha/CEBPA antibody [EP708Y] - BSA and Azide free (ab247283)

CEBP Alpha/CEBPA Western blot staining of U937 + LPS cell lysate using rabbit Anti-CEBP Alpha/CEBPA antibody

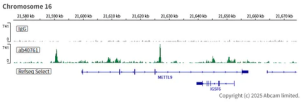
This data was developed using ab40761, the same antibody clone in a different buffer formulation. We are unsure as to the identity of the 30kda band.

All lanes:
Western blot - Anti-CEBP Alpha/CEBPA antibody [EP708Y] (ab40761) at 1/1000 dilution

All lanes:
U937 + LPS cell lysate at 10 µg

Predicted band size: 38 kDa

Observed band size: 30 kDa, 43 kDa

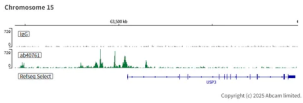


ChIC/CUT&RUN sequencing - Anti-CEBP Alpha/CEBPA antibody [EP708Y] - BSA and Azide free (ab247283)

This data was developed using ab40761, the same antibody clone in a different buffer formulation.

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 THP-1 (human monocytic leukemia monocyte) cells and 5 µg of ab40761 [EP708Y]. 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) method

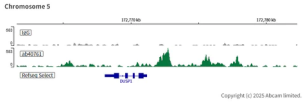


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ChIC/CUT&RUN sequencing - Anti-CEBP Alpha/CEBPA antibody [EP708Y] - BSA and Azide free (ab247283)

This data was developed using ab247283, the same antibody clone in a different buffer formulation.

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 THP-1 (human monocytic leukemia monocyte) cells and 5 µg of ab40761 [EP708Y]. 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.

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