abcam

ab317442

Anti-CEBP Alpha/CEBPA antibody [EPR27924-90]

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	EPR27924-90
Purification technique	Affinity purification Protein A
Concentration	0.474 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	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/5000
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

ChIP-seq

Tested

Species	Human
Dilution info	8 µg for 10^7 Cells
Notes	-

Expected

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

ICC/IF

Not recommended

Species	Human, Mouse, Rat
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	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	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

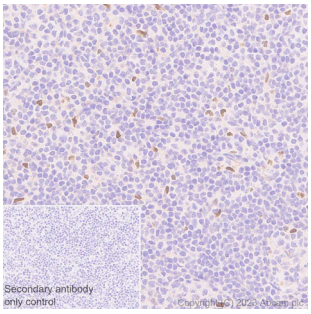
We do not recommend this combination. It is not covered by our product promise.

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.

17 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

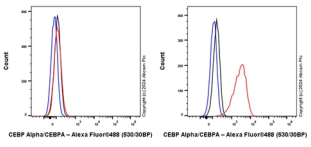
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling CEBP Alpha/CEBPA with ab317442 at 1/500 (1.004 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human tonsil. The section was incubated with ab317442 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

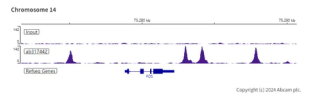


Flow Cytometry (Intracellular) - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized THP-1 (human monocytic leukemia monocyte) (Right) / Jurkat (human T cell leukemia T lymphocyte from peripheral blood) (Left) cells labelling CEBP Alpha/CEBPA with ab317442 at 1/5000 dilution (0.1ug) (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).

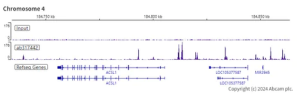
Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Low expression: Jurkat.



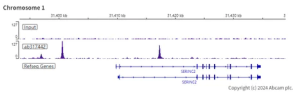
ChIP-sequencing - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

Chromatin was prepared from THP-1 cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 10^7 cells and 8 µg of ab317442 [EPR27924-90]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 60 million reads. The Input control is also shown.



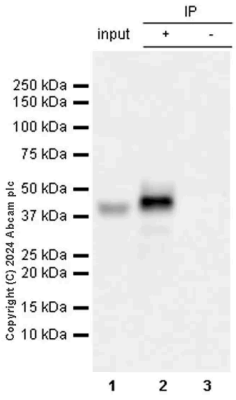
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Immunoprecipitation - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

CEBP Alpha/CEBPA was immunoprecipitated from 0.35 mg THP-1 (human monocytic leukemia monocyte) whole cell lysate with ab317442 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab317442 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: THP-1 (human monocytic leukemia monocyte) whole cell lysate
Lane 2: ab317442 IP in THP-1 (human monocytic leukemia monocyte) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab317442 in THP-1 whole cell lysate

Lysate was freshly made and used for Western blotting immediately to minimize protein degradation.

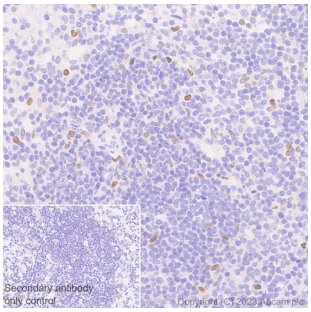
All lanes:
Immunoprecipitation - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442) at 1/30 dilution

All lanes:
THP-1 (human monocytic leukemia monocyte) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 6s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labeling CEBP Alpha/CEBPA with ab317442 at 1/2000 (0.251 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

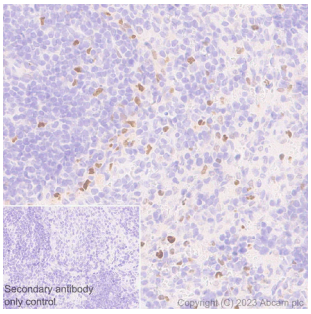
Positive staining on mouse spleen. The section was incubated with ab317442 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

Immunohistochemical analysis of paraffin-embedded Rat spleen tissue labeling CEBP Alpha/CEBPA with ab317442 at 1/2000 (0.251 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

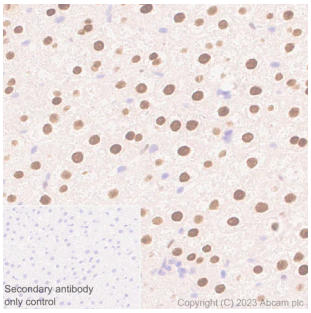
Positive staining on rat spleen. The section was incubated with ab317442 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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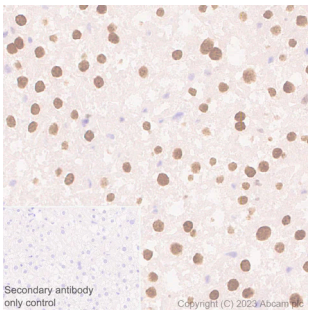
Immunohistochemical analysis of paraffin-embedded Rat liver tissue labeling CEBP Alpha/CEBPA with ab317442 at 1/2000 (0.251 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on rat liver. The section was incubated with ab317442 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

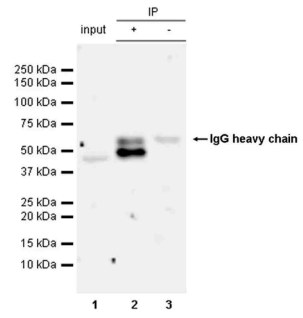
Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling CEBP Alpha/CEBPA with ab317442 at 1/2000 (0.251 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on mouse liver (PMID: 2792758). The section was incubated with ab317442 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunoprecipitation - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

CEBP Alpha/CEBPA was immunoprecipitated from 0.35 mg MEF (mouse embryo fibroblast) whole cell lysate with ab317442 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab317442 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: MEF (mouse embryo fibroblast) whole cell lysate
Lane 2: ab317442 IP in MEF (mouse embryo fibroblast) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab317442 in MEF whole cell lysate

Lysate was freshly made and used for Western blotting immediately to minimize protein degradation.

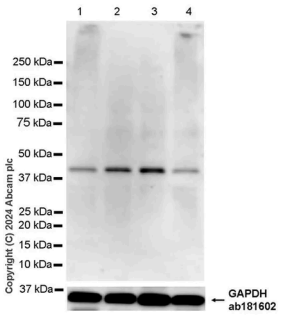
All lanes:
Immunoprecipitation - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442) at 1/30 dilution

All lanes:
MEF (mouse embryo fibroblast) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



Western blot - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

CEBP Alpha/CEBPA Western blot staining using rabbit Anti-CEBP Alpha/CEBPA antibody

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442) at 1/1000 dilution

Lane 1:
Human lung tissue lysate at 20 µg

Lane 2:
Human liver cancer tissue lysate at 20 µg

Lane 3:
Human tonsil tissue lysate at 20 µg

Lane 4:
Human spleen tissue lysate at 20 µg

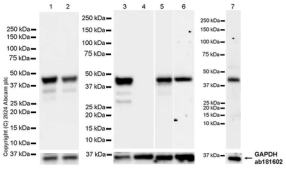
Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Developed using the ECL technique.

Observed band size: 41 kDa, 36 kDa

Exposure time: 70s



Western blot - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

CEBP Alpha/CEBPA Western blot staining using rabbit Anti-CEBP Alpha/CEBPA antibody

Low expression: Jurkat.

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 8415748).

The lanes 5-6 were developed using a high sensitivity ECL substrate.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

Exposure time: Lanes 1-4: 26 seconds, lane 5: 37 seconds, lane 6: 180 seconds, lane 7: 48 seconds

All lanes:
Western blot - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442) at 1/1000 dilution

Lane 1:
THP-1 (human monocytic leukemia monocyte) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
THP-1 transfected with siRNA specifically targeting CEBP Alpha/CEBPA whole cell lysate at 20 µg

Lane 3:
THP-1 whole cell lysate at 20 µg

Lane 4:
Jurkat (human T cell leukemia T lymphocyte from peripheral blood) whole cell lysate at 20 µg

Lane 5:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

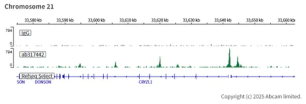
Lane 6:
NR8383 (rat alveolar macrophage) whole cell lysate at 20 µg

Lane 7:
MEF (mouse embryo fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

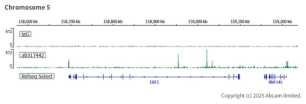
Observed band size: 26 kDa, 36 kDa, 41 kDa



ChIC/CUT&RUN sequencing - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

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 ab317442 [EPR27924-90]. 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.

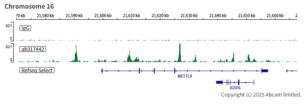
The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



ChIC/CUT&RUN sequencing - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

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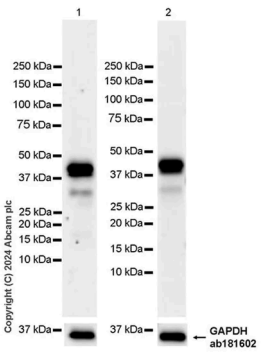
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Western blot - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442)

CEBP Alpha/CEBPA Western blot staining using rabbit Anti-CEBP Alpha/CEBPA antibody

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 8415748).

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-CEBP Alpha/CEBPA antibody [EPR27924-90] (ab317442) at 1/1000 dilution

Lane 1:
Mouse liver tissue lysate at 20 µg

Lane 2:
Rat liver tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 41 kDa, 36 kDa

Exposure time: 48s

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