abcam

ab220813

Anti-CEBP Beta antibody [E299] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	E299
Purification technique	Affinity purification Protein A
Specificity	This antibody is specific for the three CEBPB isoforms (LAP*, LAP and LIP). According to BLAST analysis, the antibody could cross-react with CEBP epsilon (32, 27 and 14kDa, 82% homology) and CEBP alpha (42kDa, 30kDa, 73% homology) in human, mouse and rat. Please be aware that this has not been confirmed experimentally. However, this could explain the background that could possibly be obtained in WB with this antibody. Please contact our Scientific Support if you have any questions.
Concentration	1.043 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	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 CEBPB

Function

Important transcription factor regulating the expression of genes involved in immune and inflammatory responses (PubMed:12048245, PubMed:1741402, PubMed:18647749, PubMed:9374525). Also plays a significant role in adipogenesis, as well as in the gluconeogenic pathway, liver regeneration, and hematopoiesis. The consensus recognition site is 5'-T[TG]NNGNAA[TG]-3'. Its functional capacity is governed by protein interactions and post-translational protein modifications. During early embryogenesis, plays essential and redundant roles with CEBPA. Has a promitotic effect on many cell types such as hepatocytes and adipocytes but has an antiproliferative effect on T-cells by repressing MYC expression, facilitating differentiation along the T-helper 2 lineage. Binds to regulatory regions of several acute-phase and cytokines genes and plays a role in the regulation of acute-phase reaction and inflammation. Also plays a role in intracellular bacteria killing (By similarity). During adipogenesis, is rapidly expressed and, after activation by phosphorylation, induces CEBPA and PPARG, which turn on the series of adipocyte genes that give rise to the adipocyte phenotype. The delayed transactivation of the CEBPA and PPARG genes by CEBPB appears necessary to allow mitotic clonal expansion and thereby progression of terminal differentiation (PubMed:20829347). Essential for female reproduction because of a critical role in ovarian follicle development (By similarity). Restricts osteoclastogenesis: together with NFE2L1; represses expression of DSPP during odontoblast differentiation (By similarity). Isoform 2. Essential for gene expression induction in activated macrophages. Plays a major role in immune responses such as CD4(+) T-cell response, granuloma formation and endotoxin shock. Not essential for intracellular bacteria killing. Isoform 3. Acts as a dominant negative through heterodimerization with isoform 2 (PubMed:11741938). Promotes osteoblast differentiation and osteoclastogenesis (By similarity).

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

ab220813 is the carrier-free version of ab32358.

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 Beta also known as CCAAT/enhancer binding protein beta or C/EBPβ is a transcription factor that regulates gene expression in various tissues. It has a molecular mass of approximately 35 kDa. CEBP Beta is expressed in liver adipose

	tissue and immune cells among others. It binds to DNA at specific CCAAT motifs and regulates transcription of genes involved in immune response metabolism and differentiation.
Biological function summary	CEBP Beta plays important roles in cellular differentiation proliferation and immune function. CEBP Beta is part of the CEBP family of transcription factors which form homo- or hetero-dimers to function effectively often with other family members like CEBP Alpha. Its activity governs important processes in hematopoiesis and adipogenesis. This transcription factor is therefore essential in the regulation of energy homeostasis and immune response influencing the expression of various cytokines and acute-phase proteins.
Pathways	CEBP Beta integrates signals in key biological pathways such as the JAK-STAT and NF-kB pathways. Activation via cytokine signaling CEBP Beta interacts with STAT proteins to modulate gene expression linked to inflammatory responses. It has a significant role in the NF-kB pathway where it cooperates with Rel proteins to regulate genes involved in immune and stress responses including TNF and IL-1.
Associated diseases and disorders	CEBP Beta is implicated in conditions such as acute myeloid leukemia (AML) and obesity-related complications. Abnormal regulation of CEBP Beta can contribute to leukemogenesis by altering the expression of cell cycle and differentiation genes. Additionally CEBP Beta's role in lipid storage and insulin sensitivity links it to metabolic disorders such as Type 2 diabetes. Interactions with proteins like PPAR gamma in adipose tissues influence these disease processes.

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

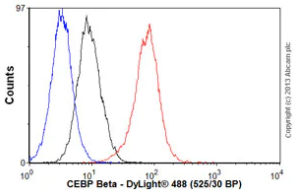
We do not recommend this combination. It is not covered by our product promise.

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:

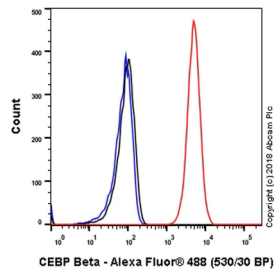
6 product images



Flow Cytometry (Intracellular) - Anti-CEBP Beta antibody [E299] - BSA and Azide free (ab220813)

CEBP Beta Flow Cytometry (Intracellular) staining using rabbit Anti-CEBP Beta antibody

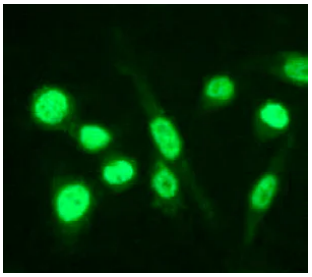
Overlay histogram showing HeLa (Human epithelial cell line from cervix adenocarcinoma) cells stained with ab32358 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab32358, 1/1000 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. Unlabeled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32358).



Flow Cytometry (Intracellular) - Anti-CEBP Beta antibody [E299] - BSA and Azide free (ab220813)

CEBP Beta Flow Cytometry (Intracellular) staining using rabbit Anti-CEBP Beta antibody

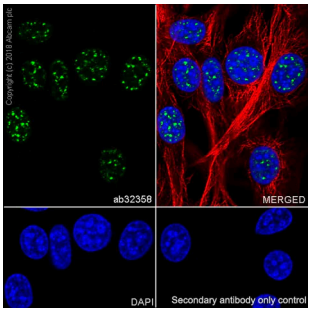
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling CEBP Beta with Purified ab32358 at 1/600 dilution (1 µg/ml) (red). Cells were fixed with 80% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32358).



Immunocytochemistry/ Immunofluorescence - Anti-CEBP Beta antibody [E299] - BSA and Azide free (ab220813)

CEBP Beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CEBP Beta antibody

ab32358, at a 1/50 dilution, staining CEBP Beta in HeLa (Human epithelial cell line from cervix adenocarcinoma) cells by Immunofluorescence.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32358).



Immunocytochemistry/ Immunofluorescence - Anti-CEBP Beta antibody [E299] - BSA and Azide free (ab220813)

CEBP Beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CEBP Beta antibody

Immunocytochemistry/ Immunofluorescence analysis of NIH/3T3 (Mouse embryonic fibroblast) cells labeling CEBP Beta with Purified ab32358 at 1:500 dilution (1.2 µg/ml). Cells were fixed in 100% Methanol. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32358).

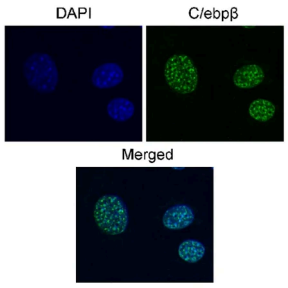


Image from Sikkeland et al. PLoS One. 2013 Jul 10;8(7):e68249. doi: 10.1371/journal.pone.0068249. Print 2013. Fig S1.

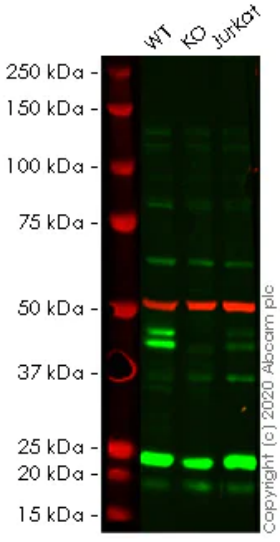
Immunocytochemistry/ Immunofluorescence - Anti-CEBP Beta antibody [E299] - BSA and Azide free (ab220813)

CEBP Beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CEBP Beta antibody

3T3-L1 (Mouse embryonic fibroblast cell line) cells were plated on cover slips, grown to post confluency and treated with adipogenic cocktail for 16 h. Cells were washed briefly with phosphate buffered saline (PBS) and fixed in methanol at −20°C for 5 min. Cells were then blocked with 1% BSA for 30 min before incubation with ab32358 at a 1/100 dilution at 4°C overnight and incubated with Alexa Fluor® 488 goat anti-rabbit secondary antibodies (1:500) for 1 h at room temperature.
DAPI staining was used for visualizing the nuclei.

Images were acquired with an Olympus FlowView FV1000.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32358).



Western blot - Anti-CEBP Beta antibody [E299] - BSA and Azide free (ab220813)

CEBP Beta Western blot staining using rabbit Anti-CEBP Beta antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32358).
Lanes 1-3: Merged signal (red and green). Green - ab32358 observed at 40 and 45 kDa. Red - loading control ab7291 observed at 50 kDa.

ab32358 Anti-CEBP Beta antibody [E299] - C-terminal was shown to specifically react with CEBP Beta in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab261771 (knockout cell lysate ab256874) was used. Wild-type and CEBP Beta knockout samples were subjected to SDS-PAGE. ab32358 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-CEBP Beta antibody [E299] - C-terminal (ab32358) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
CEBP Beta knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human CEBPB (CEBP Beta) knockout HeLa cell line (ab261771)

Lane 3:
Jurkat cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 36 kDa

Observed band size: 40 kDa, 45 kDa

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