abcam

ab259330

Anti-KAT3B / p300 antibody [EPR23753-55]

Recombinant | RabMAb | Advanced Validation | KO Validated | 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	EPR23753-55
Purification technique	Affinity purification Protein A
Concentration	0.476 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	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Target data

See full target information EP300

Function

Functions as a histone acetyltransferase and regulates transcription via chromatin remodeling (PubMed:23415232, PubMed:23934153, PubMed:40240600, PubMed:8945521). Acetylates all four core histones in nucleosomes (PubMed:23415232, PubMed:23934153, PubMed:8945521). Histone acetylation gives an epigenetic tag for transcriptional activation (PubMed:23415232, PubMed:23934153, PubMed:8945521). Mediates acetylation of histone H3 at 'Lys-122' (H3K122ac), a modification that localizes at the surface of the histone octamer and stimulates transcription, possibly by promoting nucleosome instability (PubMed:23415232). Mediates acetylation of histone H3 at 'Lys-18' and 'Lys-27' (H3K18ac and H3K27ac, respectively) (PubMed:21131905, PubMed:23911289). Also able to acetylate histone lysine residues that are already monomethylated on the same side chain to form N6-acetyl-N6-methyllysine (Kacme), an epigenetic mark of active chromatin associated with increased transcriptional initiation (PubMed:37731000). Catalyzes formation of histone H4 acetyl-methylated at 'Lys-5' and 'Lys-12' (H4K5acme and H4K12acme, respectively) (PubMed:37731000). In response to DNA damage, catalyzes acetylation of histone H1 at 'Lys-75' (H1K75ac) following histone H1 deamidation by CTPS1, increasing chromatin accessibility to facilitate the recruitment of DNA repair proteins (PubMed:40240600). Also functions as acetyltransferase for non-histone targets, such as ALX1, HDAC1, PRDM16, PRMT1, SIRT2, STAT3, ZNF76 or GLUL (PubMed:12929931, PubMed:15653507, PubMed:16285960, PubMed:16337145, PubMed:16762839, PubMed:18722353, PubMed:18782771, PubMed:26990986). Acetylates 'Lys-131' of ALX1 and acts as its coactivator (PubMed:12929931). Acetylates SIRT2 and is proposed to indirectly increase the transcriptional activity of p53/TP53 through acetylation and subsequent attenuation of SIRT2 deacetylase function (PubMed:18722353). Following DNA damage, forms a stress-responsive p53/TP53 coactivator complex with JMY which mediates p53/TP53 acetylation, thereby increasing p53/TP53-dependent transcription and apoptosis (PubMed:11511361, PubMed:15448695). Promotes chromatin acetylation in heat shock responsive HSP genes during the heat shock response (HSR), thereby stimulating HSR transcription (PubMed:18451878). Acetylates HDAC1 leading to its inactivation and modulation of transcription (PubMed:16762839). Acetylates 'Lys-247' of EGR2 (By similarity). Acts as a TFAP2A-mediated transcriptional coactivator in presence of CITED2 (PubMed:12586840). Plays a role as a coactivator of NEUROD1-dependent transcription of the secretin and p21 genes and controls terminal differentiation of cells in the intestinal epithelium. Promotes cardiac myocyte enlargement (PubMed:14752053). Can also mediate transcriptional repression. Acetylates FOXO1 and enhances its transcriptional activity (PubMed:15890677). Acetylates STAT3 at different sites, promoting both STAT3 dimerization and activation and

recruitment to chromatin (PubMed:15653507, PubMed:16285960, PubMed:18782771). Acetylates BCL6 which disrupts its ability to recruit histone deacetylases and hinders its transcriptional repressor activity (PubMed:12402037). Participates in CLOCK or NPAS2-regulated rhythmic gene transcription; exhibits a circadian association with CLOCK or NPAS2, correlating with increase in PER1/2 mRNA and histone H3 acetylation on the PER1/2 promoter (PubMed:14645221). Acetylates MTA1 at 'Lys-626' which is essential for its transcriptional coactivator activity (PubMed:16617102). Acetylates XBP1 isoform 2; acetylation increases protein stability of XBP1 isoform 2 and enhances its transcriptional activity (PubMed:20955178). Acetylates PCNA; acetylation promotes removal of chromatin-bound PCNA and its degradation during nucleotide excision repair (NER) (PubMed:24939902). Acetylates MEF2D (PubMed:21030595). Acetylates and stabilizes ZBTB7B protein by antagonizing ubiquitin conjugation and degradation, this mechanism may be involved in CD4/CD8 lineage differentiation (PubMed:20810990). Acetylates GABPB1, impairing GABPB1 heterotetramerization and activity (By similarity). Acetylates PCK1 and promotes PCK1 anaplerotic activity (PubMed:30193097). Acetylates RXRA and RXRG (PubMed:17761950). Acetylates isoform M2 of PKM (PKM2), promoting its homodimerization and conversion into a protein kinase (PubMed:24120661). Acetylates RPTOR in response to leucine, leading to activation of the mTORC1 complex (PubMed:30197302, PubMed:32561715). Acetylates RICTOR, leading to activation of the mTORC2 complex (PubMed:22084251). Mediates cAMP-gene regulation by binding specifically to phosphorylated CREBBP (PubMed:8917528). In addition to protein acetyltransferase, can use different acyl-CoA substrates, such as (2E)-butenoyl-CoA (crotonyl-CoA), butanoyl-CoA (butyryl-CoA), 2-hydroxyisobutanoyl-CoA (2-hydroxyisobutyryl-CoA), lactoyl-CoA, propanoyl-CoA (propionyl-CoA) or isonicotinyl-CoA, and is able to mediate protein crotonylation, butyrylation, 2-hydroxyisobutyrylation, lactylation, propionylation or isonicotinylation, respectively (PubMed:17267393, PubMed:25818647, PubMed:29775581, PubMed:31645732, PubMed:34545082). Acts as a histone crotonyltransferase; crotonylation marks active promoters and enhancers and confers resistance to transcriptional repressors (PubMed:25818647). Histone crotonyltransferase activity is dependent on the concentration of (2E)-butenoyl-CoA (crotonyl-CoA) substrate and such activity is weak when (2E)-butenoyl-CoA (crotonyl-CoA) concentration is low (PubMed:25818647). Also acts as a histone butyryltransferase; butyrylation marks active promoters (PubMed:17267393). Catalyzes histone lactylation in macrophages by using lactoyl-CoA directly derived from endogenous or exogenous lactate, leading to stimulates gene transcription (PubMed:31645732). Acts as a protein-lysine 2-hydroxyisobutyryltransferase; regulates glycolysis by mediating 2-hydroxyisobutyrylation of glycolytic enzymes (PubMed:29775581). Functions as a transcriptional coactivator for SMAD4 in the TGF-beta signaling pathway (PubMed:25514493). (Microbial infection) In case of HIV-1 infection, it is recruited by the viral protein Tat. Regulates Tat's transactivating activity and may help inducing chromatin remodeling of proviral genes. Binds to and may be involved in the transforming capacity of the adenovirus E1A protein.

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	KAT3B also known as p300 is a histone acetyltransferase with a molecular weight of approximately 300 kDa. Known for its ability to acetylate histone and non-histone proteins p300 modulates gene expression by altering chromatin structure. The protein is ubiquitously expressed across various tissues impacting numerous cellular processes by its mechanical functions of modifying chromatin.
Biological function summary	KAT3B/p300 influences multiple cellular activities like cell growth differentiation and apoptosis. It functions as a transcriptional coactivator and integrates various signaling pathways into the cell's gene expression program. p300 often forms complexes with other transcription factors enhancing or repressing their activity based on the cellular context. By modifying transcription factors it plays an essential role in controlling cell fate decisions.
Pathways	P300 participates in the regulation of significant cellular processes including the Wnt signaling pathway and the p53 pathway. In the Wnt signaling pathway p300 acts alongside beta-catenin to regulate gene expression while in the p53 pathway it acetylates the p53 protein influencing the cell’s response to DNA damage. These pathways highlight p300's interaction with important proteins such as CBP (CREB-binding protein) which shares a similar functional repertoire and works synergistically in gene regulation.

Associated diseases and disorders	P300 is implicated in cancers and congenital disorders. In cancer aberrant regulation or mutation of p300 can lead to uncontrolled cell proliferation and tumor growth; p300 inhibitors like C646 are researched for their therapeutic potential. Additionally Rubinstein-Taybi syndrome a congenital disorder results from mutations in the p300 gene showcasing p300's importance in developmental processes. The interplay of p300 with proteins such as CBP is also relevant in these conditions where disrupted interactions may lead to disease manifestation.

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

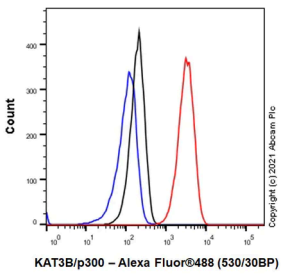
We do not recommend this combination. It is not covered by our product promise.

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.

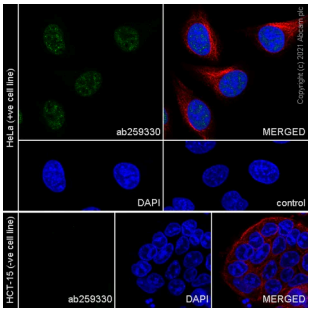
9 product images



Flow Cytometry (Intracellular) - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Flow Cytometry (Intracellular) staining using rabbit Anti-KAT3B / p300 antibody

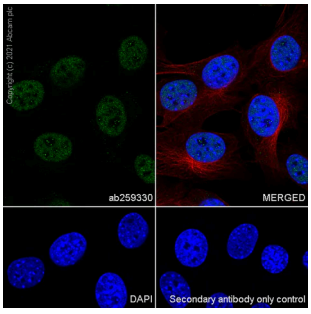
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling KAT3B / p300 with ab259330 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-KAT3B / p300 antibody

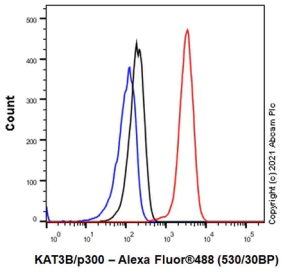
Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized HeLa cells labelling KAT3B / p300 with ab259330 at 1/500 (0.926 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green). Confocal image showing mainly nuclear staining in HeLa cells and no staining in HCT-15 cells. Negative control: HCT-15 (PMID: 14732695) is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2ug/ml dilution.



Immunocytochemistry/ Immunofluorescence - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-KAT3B / p300 antibody

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 cells labelling KAT3B / p300 with ab259330 at 1/500 (0.926 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green). Confocal image showing nuclear staining in NIH/3T3 cells is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2ug/ml dilution.

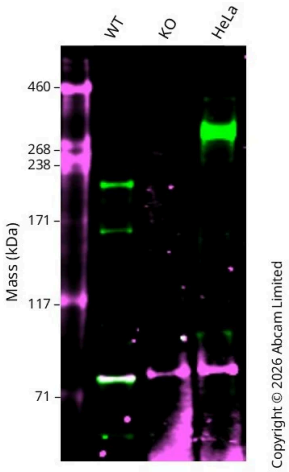


Flow Cytometry (Intracellular) - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Flow Cytometry (Intracellular) staining using rabbit Anti-KAT3B / p300 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast) cells labelling KAT3B / p300 with ab259330 at 1/500 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). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Western blot staining using rabbit Anti-KAT3B / p300 antibody

Western blot: Anti-KAT3B / p300 antibody [EPR23753-55] ab259330 staining at 1/200 dilution, shown in green; Mouse anti-CANX ab238078 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 200 / 350 kDa in Wild-type HCT 116 cell line with no signal observed at this size in EP300 knockout HCT 116 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330) at 1/200 dilution

Lane 1:
Wild-type HCT 116 cell lysates at 20 µg

Lane 2:
Western blot - Human EP300 knockout HCT116 cell line (ab286395) at 40 µg

Lane 3:
HeLa cell lysates at 20 µg

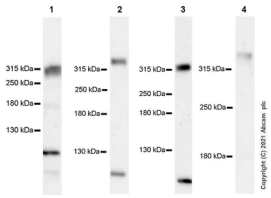
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 264 kDa

Observed band size: 200 kDa, 350 kDa



Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Western blot staining using rabbit Anti-KAT3B / p300 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Fresh lysates were used in this WB.

The ~100KDa signal is a non-target band.

Lane 2 of the blot was developed using a higher-sensitivity ECL substrate.

Exposure time: 3 minutes

All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330) at 1/1000 dilution

Lane 1:

HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Lane 2:
K562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate at 10 µg

Lane 3:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 10 µg

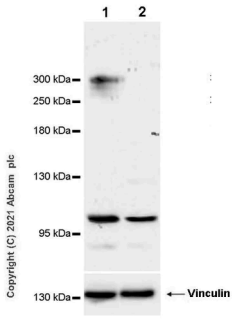
Lane 4:
PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate at 10 µg

Secondary

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

Predicted band size: 264 kDa

Observed band size: 300 kDa



Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

KAT3B / p300 Western blot staining using rabbit Anti-KAT3B / p300 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Fresh lysates were used in this WB.

The ~100KDa signal is a non-target band.

Negative control: HCT15 (PMID:14732695)

Exposure time: 3 minutes

All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330) at 1/1000 dilution

Lane 1:
K562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate at 20 µg

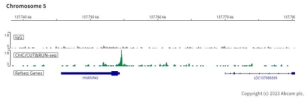
Lane 2:
HCT15 (human colon epithelial cell), whole cell lysate at 20 µg

Secondary

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

Predicted band size: 264 kDa

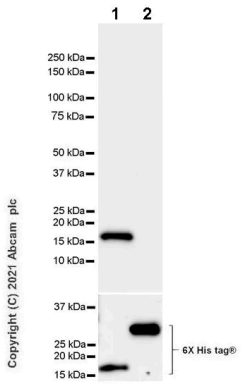
Observed band size: 300 kDa



ChIC/CUT&RUN sequencing - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2.5 x 10^5 HeLa (Human cervix adenocarcinoma epithelial cell line) cells and 5 µg of ab259330

[EPR23753-55]. 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.



Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
This antibody has no cross-reaction with human CREBBP.

Both recombinant proteins were made in-house.

The sample loaded onto lane 1 was purified EP300 recombinant protein expressed from an E.coli expression system.

The sample loaded onto lane 2 is E.coli extracts containing recombinant CREBBP protein.

Exposure time: 15 seconds

All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23753-55] (ab259330) at 1/1000 dilution

Lane 1:
His-tagged human EP300 recombinant protein at 0.01 µg

Lane 2:
His-tagged human CREBBP recombinant protein at 0.01 µg

Secondary

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

Predicted band size: 264 kDa

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