abcam

ab275378

Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade

Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378) is a rabbit monoclonal antibody detecting KAT3B / p300 in **Western Blot, Flow Cytometry (Intra), IP, ICC/IF, ChIP**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR23495-268
Purification technique	Affinity purification Protein A
Specificity	Anti-KAT3B / p300 antibody [EPR23495-268] reacts weakly with CREBBP.
Concentration	0.524 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

ChIP

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant full length protein - Human
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	-

Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat, Recombinant full length protein - Human
Dilution info	-

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

What is this antibody validated in?
Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunocytochemistry/immunofluorescence (ICC/IF), ChIP in Human, Mouse, Rat samples.

What is the molecular weight of KAT3B / p300?
Anti-KAT3B / p300 [EPR23495-268] - ChIP Grade (ab275378) specifically detects a band for KAT3B / p300 (UniProt: Q09472) at a molecular weight of 264kDa.

Trusted by the scientific community
Anti-KAT3B / p300 [EPR23495-268] - ChIP Grade (ab275378) was first used in a scientific publication in 2020 and has been cited over 10 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378) has been confirmed by Western blot testing in EP300 Knockout HCT 116 cell line.

Other related products
We have a range of other formats of antibody clone [EPR23495-268] also available for your convenience: ab275378, Carrier free - ab275388

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size 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

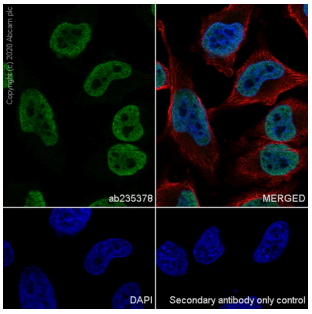
We do not recommend this combination. It is not covered by our product promise.

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.

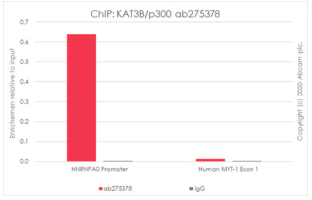
9 product images



Immunocytochemistry/ Immunofluorescence - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

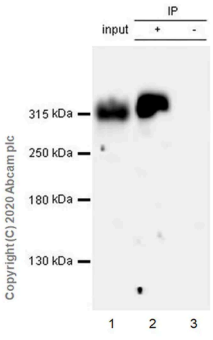
KAT3B / p300 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-KAT3B / p300 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa cells labelling KAT3B/p300 with ab275378 at 1/100 (4.77 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing nuclear and weakly cytoplasmic staining in HeLa cell line. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



ChIP - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

Chromatin was prepared from K-562 cells according to theAbcam 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 ab275378 (red), or 5 µg of rabbit normal IgG ab172730 (gray) and 25 µl of Protein A/G sepharose beads. The immunoprecipitated DNA was quantified by real time PCR (Sybr green approach).



Immunoprecipitation - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

KAT3B/p300 was immunoprecipitated from 0.35 mg K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate with ab275378 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab275378 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate 10 ug

Lane 2: ab275378 IP in K-562 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab275378 in K-562 whole cell lysate

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

Exposure time: 76 seconds.

Lysate was freshly prepared and used in IP immediately to mininize protein degradation.

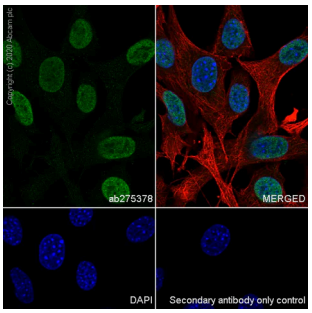
Incubation time was 2 hours.

All lanes:

Immunoprecipitation - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

Predicted band size: 264 kDa

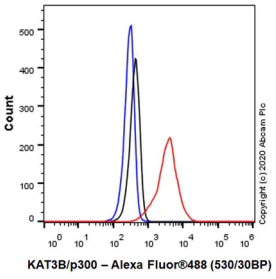
Observed band size: 300 kDa



Immunocytochemistry/ Immunofluorescence - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

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

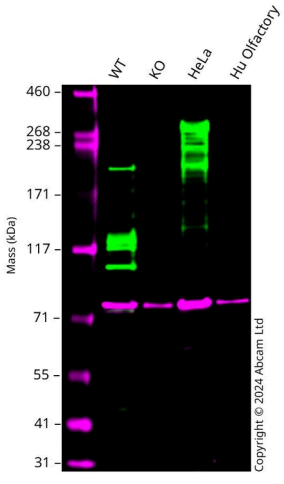
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 cells labelling KAT3B/p300 with ab275378 at 1/100 (4.77 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing nuclear and weakly cytoplasmic staining in NIH/3T3 cell line. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast) cells labelling KAT3B/p300 with ab275378 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Black) 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.



Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

Western blot: Anti-EP300 antibody [EPR23495-268] (ab275378) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab275378 was shown to bind specifically to EP300. A band was observed at 200/90-130 kDa in wild-type HCT 116 cell lysates with no signal observed at this size in EP300 knockout cell line. To generate this image, wild-type and EP300 knockout HCT 116 cell lysates were analysed. First, 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 °C. 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 IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378) at 1/1000 dilution

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

Lane 2:
EP300 knockout HCT 116 cell lysate at 20 µg

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

Lane 3:
HeLa cell lysate at 20 µg

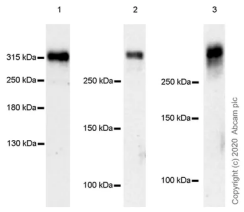
Lane 4:
Human brain olfactory lobe cell lysate at 20 µg

Secondary

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

Performed under reducing conditions.

Observed band size: 200 kDa, 90-130 kDa



Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

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

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 8995708).

Lysates were made freshly and used in WB immediately to minimize protein degradation.

Exposure times: Lane 1: 125 seconds;Lanes 2-3: 3 minutes.

All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378) at 1/1000 dilution

Lane 1:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 2:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

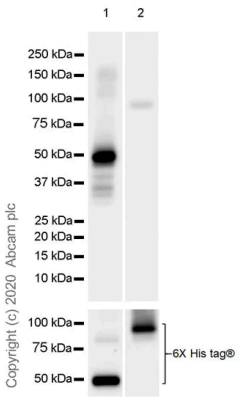
Lane 3:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

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



Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Both recombinant proteins were expressed from a E.coil expression system. Sample loaded onto lane 2 was E.coil extract containing CREBBP recombinant protein.

This product has weak cross reaction with CREBBP protein.

Exposure time: 5.5 seconds.

All lanes:
Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378) at 1/1000 dilution

Lane 1:
His-tagged human KAT3B/p300 recombinant protein 20 ng

Lane 2:
His-tagged human CREBBP recombinant protein, 20 ng

Secondary

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

Predicted band size: 264 kDa

Observed band size: 88.7 kDa, 46.3 kDa

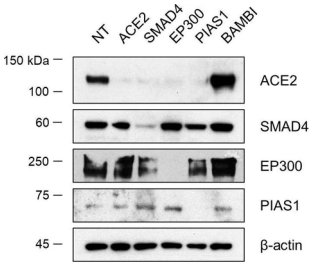


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Western blot - Anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade (ab275378)

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

KAT3B / p300 western blot using anti-KAT3B / p300 antibody [EPR23495-268] - ChIP Grade ab275378. Publication image and figure legend from Sherman, E. J., Mirabelli, C., et al., 2022, PLoS Pathog, PubMed 35231079.

ab275378 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab275378 please see the product overview.

Regulation of ACE2 by SMAD4, EP300, PIAS1, and BAMBI is mediated at the mRNA level.(A) Immunoblot of lysates collected from HuH7 cells targeted by CRISPR with a gRNA against the indicated gene or a nontargeting (NT) control sequence. (B) Proportion of saponin-permeabilized cells exhibiting ACE2 staining above background after CRISPR targeting of the indicated gene in ACE2-enriched HuH7 cells. (C) Immunofluorescence microscopy of ACE2 staining (green) in ACE2-enriched HuH7 cells either untreated (WT) or targeted by CRISPR with a gRNA against the indicated gene or a nontargeting (NT) control sequence. Scale bar = 100 μm. (D) Quantification of relative ACE2 mRNA levels in the indicated cell lines by qRT-PCR of ACE2 mRNA, normalized to the mean Ct for a panel of control transcripts (RPL37, RPL38, and ACTB). Asterisks indicate $p<0.05$ relative to nontargeting controls by Student's t-test. Individual data points in panels B and D represent technical replicates.

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