abcam

Product datasheet

Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade ab14984

11 Abreviews 74 References 4 Images

Overview

Product name	Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade
Description	Mouse monoclonal [3G230 / NM-11] to KAT3B / p300 - ChIP Grade
Host species	Mouse
Specificity	Published data suggest that this antibody cross-reacts with both CBP and P300 (PMID: 8995708 and 9219037). This paper (PMID: 9219037) also maps the epitope of this antibody to 2071-2091 of CBP.
Tested applications	**Suitable for:** WB, ChIP
Species reactivity	**Reacts with:** Human **Predicted to work with:** Rat
Immunogen	Recombinant full length protein corresponding to Human KAT3B/ p300.
Positive control	WB: HeLa and Jurkat whole cell lysates.
General notes	This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact **orders@abcam.com**. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine

Purity	Protein G purified
Clonality	Monoclonal
Clone number	3G230 / NM-11
Isotype	IgG1
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab14984 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (5)	Use a concentration of 1 µg/ml. Detects a band of approximately 300 kDa (predicted molecular weight: 300 kDa). We recommend using 3% milk as the blocking agent in Western Blot.
ChIP	★★★★★ (3)	Use 2µg for 10^6 cells.

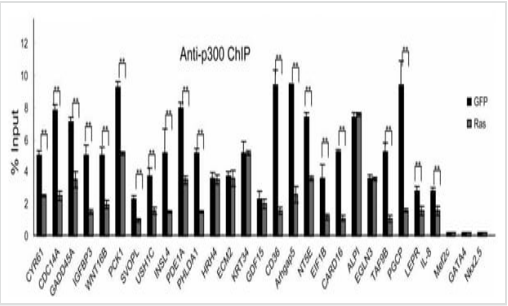
Target

Function

Functions as histone acetyltransferase and regulates transcription via chromatin remodeling. Acetylates all four core histones in nucleosomes. Histone acetylation gives an epigenetic tag for transcriptional activation. Mediates cAMP-gene regulation by binding specifically to phosphorylated CREB protein. 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. Mediates acetylation of histone H3 at 'Lys-27' (H3K27ac). Also functions as acetyltransferase for nonhistone targets. Acetylates 'Lys-131' of ALX1 and acts as its coactivator. Acetylates SIRT2 and is proposed to indirectly increase the transcriptional activity of TP53 through acetylation and subsequent attenuation of SIRT2 deacetylase function. Acetylates HDAC1 leading to its inactivation and modulation of transcription. Acts as a TFAP2A-mediated transcriptional coactivator in presence of CITED2. 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. Can also mediate transcriptional repression. Binds to and may be involved in the transforming capacity of the adenovirus E1A protein. 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. Acetylates FOXO1 and enhances its transcriptional activity. Acetylates BCL6 wich disrupts its ability to recruit histone deacetylases and hinders its transcriptional repressor activity. 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. Acetylates MTA1 at 'Lys-626' which is essential for its transcriptional coactivator activity (PubMed:10733570, PubMed:11430825, PubMed:11701890, PubMed:12402037, PubMed:12586840, PubMed:12929931, PubMed:14645221, PubMed:15186775, PubMed:15890677, PubMed:16617102, PubMed:16762839, PubMed:18722353, PubMed:18995842, PubMed:23415232, PubMed:23911289, PubMed:23934153, PubMed:8945521). 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.
Involvement in disease	Defects in EP300 may play a role in epithelial cancer. Chromosomal aberrations involving EP300 may be a cause of acute myeloid leukemias. Translocation t(8;22)(p11;q13) with KAT6A. Rubinstein-Taybi syndrome 2
Sequence similarities	Contains 1 bromo domain. Contains 1 CBP/p300-type HAT (histone acetyltransferase) domain. Contains 1 KIX domain. Contains 2 TAZ-type zinc fingers. Contains 1 ZZ-type zinc finger.
Domain	The CRD1 domain (cell cycle regulatory domain 1) mediates transcriptional repression of a subset of p300 responsive genes; it can be de-repressed by CDKN1A/p21WAF1 at least at some promoters. It conatins sumoylation and acetylation sites and the same lysine residues may be targeted for the respective modifications. It is proposed that deacetylation by SIRT1 allows sumoylation leading to suppressed activity.
Post-translational modifications	Acetylated on Lys at up to 17 positions by intermolecular autocatalysis. Deacetylated in the transcriptional repression domain (CRD1) by SIRT1, preferentially at Lys-1020. Deacetylated by SIRT2, preferentially at Lys-418, Lys-423, Lys-1542, Lys-1546, Lys-1549, Lys-1699, Lys-1704 and Lys-1707. Citrullinated at Arg-2142 by PADI4, which impairs methylation by CARM1 and promotes interaction with NCOA2/GRIP1. Methylated at Arg-580 and Arg-604 in the KIX domain by CARM1, which blocks association with CREB, inhibits CREB signaling and activates apoptotic response. Also methylated at Arg-2142 by CARM1, which impairs interaction with NCOA2/GRIP1. Sumoylated; sumoylation in the transcriptional repression domain (CRD1) mediates transcriptional repression. Desumoylated by SENP3 through the removal of SUMO2 and SUMO3. Probable target of ubiquitination by FBXO3, leading to rapid proteasome-dependent degradation. Phosphorylated by HIPK2 in a RUNX1-dependent manner. This phosphorylation that activates EP300 happens when RUNX1 is associated with DNA and CBFB. Phosphorylated by ROCK2 and this enhances its activity. Phosphorylation at Ser-89 by AMPK reduces interaction with nuclear receptors, such as PPARG.
Cellular localization	Cytoplasm. Nucleus. In the presence of ALX1 relocalizes from the cytoplasm to the nucleus. Colocalizes with ROCK2 in the nucleus.

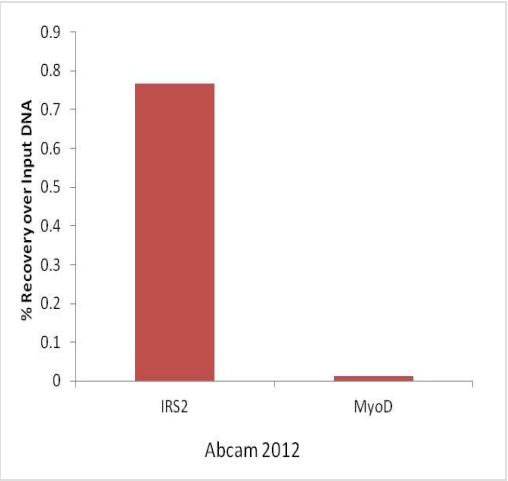
Images



ChIP - Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade (ab14984)

Image from Liu Y et al., J Biol Chem. 2012;287(49):41469-80. Fig 5(B).; doi: 10.1074/jbc.M112.367847.

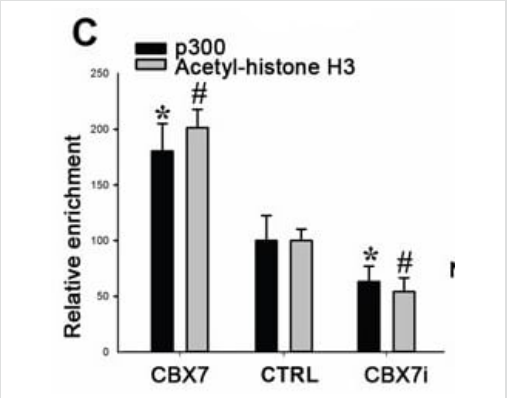
The recruitment of p300 to the genes that exhibited changes in H3K56ac was analyzed using ChIP analysis, with IL-8 as a positive control and Mef2c, GATA4, and Nkx2.5 as negative controls.



ChIP - Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade (ab14984)

ChIP was performed on HeLa chromatin from 4 million cells using 8ug of ab14984. Positive control locus IRS2 shows enrichment over the negative control MyoD as expected.

This data was provided by an anonymous collaborator.

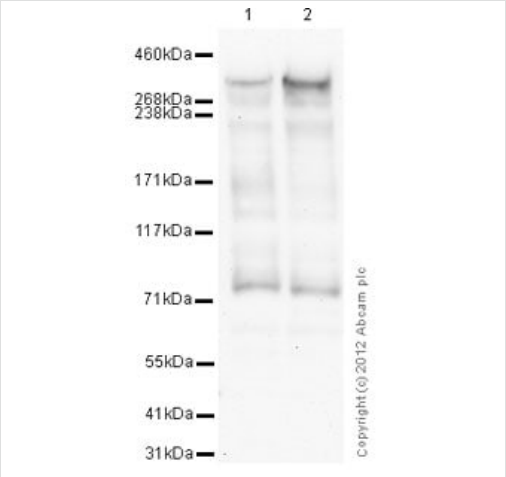


ChIP - Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade (ab14984)

Image from Ni S et al., Oncotarget. 2017;8(5):8010-8021. Fig 5C.; doi: 10.18632/oncotarget.14037.

CBX7 promotes p300-PTEN promoter binding and Histone H3 acetylation in pancreatic cancer cells. CTRL, CBX7, and CBX7i Panc-1 cells were subjected to CHIP assay to determine the enrichment of p300 and acetylated Histone H3 on PTEN promoter. (*,# P<0.05, compared with the control group.)

ChIP assay was performed using a ChIP qPCR Assay Kit. The bound PTEN promoter sequence was verified using RT-PCR (Real-Time polymerase chain reaction) assay with DNA fragments immunoprecipitated by anti-p300 antibodies (ab14984), anti-acetyl-histone H3, or control rabbit IgG. The DNA fragments were amplified by quantitative RT-PCR. The RT-PCR primers are 5′-CGG GCG GTG ATG TGG C-3′ and 5′-GCC TCA CAG CGG CTC AAC TCT-3′.



Western blot - Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade (ab14984)

All lanes : Anti-KAT3B / p300 antibody [3G230 / NM-11] - ChIP Grade (ab14984) at 5 µg/ml

Lane 1 : HeLa (Human epithelial carcinoma cell line) Nuclear Lysate
Lane 2 : Jurkat nuclear extract lysate (**ab14844**)

Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat polyclonal Secondary Antibody to Mouse IgG - H&L (HRP), pre-adsorbed at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 300 kDa
Observed band size: 300 kDa
Additional bands at: 75 kDa. We are unsure as to the identity of these extra bands.

Exposure time: 20 minutes

This blot was produced using a 3-8% Tris Acetate gel under the TA buffer system. The gel was run at 150V for 60 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 3% Milk before being incubated with ab14984 overnight at 4°C. Antibody binding was detected using an anti-mouse secondary antibody conjugated to HRP, and visualised using ECL development solution.

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