

Phospho-EP300(S89) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3197a

Product Information

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|--------------------------|------------------------|
| Application | WB, IHC-P, DB, E |
| Primary Accession | Q09472 |
| Other Accession | B2RWS6 |
| Reactivity | Human |
| Predicted | Mouse |
| Host | Rabbit |
| Clonality | Polyclonal |
| Isotype | Rabbit IgG |
| Calculated MW | 264161 |

Additional Information

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|---------------------------|---|
| Gene ID | 2033 |
| Other Names | Histone acetyltransferase p300, p300 HAT, E1A-associated protein p300, EP300, P300 |
| Target/Specificity | This EP300 Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding S89 of human EP300. |
| Dilution | WB~~1:1000 IHC-P~~1:100~500 DB~~1:500 E~~Use at an assay dependent concentration. |
| Format | Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification. |
| Storage | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| Precautions | Phospho-EP300(S89) Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

Protein Information

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|-----------------|---|
| Name | EP300 {ECO:0000303 PubMed:15706485, ECO:0000312 HGNC:HGNC:3373} |
| 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 CTP51, 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](#)).

Cellular Location

Cytoplasm. Nucleus. Chromosome Note=Localizes to active chromatin: Colocalizes with histone H3 acetylated and/or crotonylated at 'Lys-18' (H3K18ac and H3K18cr, respectively) (PubMed:[25818647](#)). In the presence of ALX1 relocates from the cytoplasm to the nucleus. Colocalizes with ROCK2 in the nucleus (PubMed:[12929931](#)). Localizes to sites of DNA damage (PubMed:[25593309](#)).

Background

EP300 encodes the adenovirus E1A-associated cellular p300 transcriptional co-activator protein. p300 is related by sequence to CPB (CREB-binding protein [CREB: cyclic-AMP responsive element binding protein]), and like CPB can stimulate transcription through activation of CREB. This EP300 activity is specifically inhibited by the adenovirus oncoprotein E1A. EP300 has also been identified as a co-activator of HIF1A (hypoxia-inducible factor 1 alpha), and thus plays a role in the stimulation of hypoxia-induced genes such as VEGF.

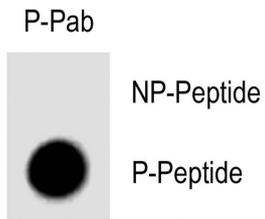
References

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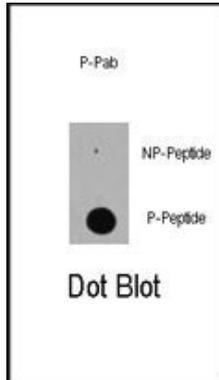
Images

Dot blot analysis of Phospho-EP300(S89) Antibody (Cat. AP3197a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibodies working concentration was 0.5ug

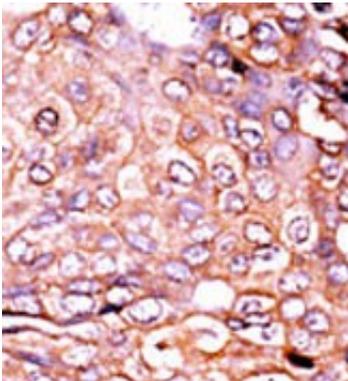
per ml.



Dot Blot



Dot blot analysis of anti-Phospho-EP300-S89 Pab (Cat. #AP3197a) on nitrocellulose membrane. 50ng of Phospho-peptide (BP3197a) or Non Phospho-peptide per dot were adsorbed. Antibodies working concentration was 0.5ug per ml.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

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