

# p300 (Acetyl Lys1542) Polyclonal Antibody

Catalog # AP63264

## Product Information

Application	WB
Primary Accession	<a href="#">Q09472</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	264161

## Additional Information

Gene ID	2033
Other Names	EP300; P300; Histone acetyltransferase p300; p300 HAT; E1A-associated protein p300
Dilution	WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/10000. Not yet tested in other applications.
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

## Protein Information

Name	EP300 {ECO:0000303   PubMed:15706485, ECO:0000312   HGNC:HGNC:3373}
Function	Functions as a histone acetyltransferase and regulates transcription via chromatin remodeling (PubMed: <a href="#">23415232</a> , PubMed: <a href="#">23934153</a> , PubMed: <a href="#">8945521</a> ). Acetylates all four core histones in nucleosomes (PubMed: <a href="#">23415232</a> , PubMed: <a href="#">23934153</a> , PubMed: <a href="#">8945521</a> ). Histone acetylation gives an epigenetic tag for transcriptional activation (PubMed: <a href="#">23415232</a> , PubMed: <a href="#">23934153</a> , PubMed: <a href="#">8945521</a> ). 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: <a href="#">23415232</a> ). Mediates acetylation of histone H3 at 'Lys-18' and 'Lys-27' (H3K18ac and H3K27ac, respectively) (PubMed: <a href="#">21131905</a> , PubMed: <a href="#">23911289</a> ). 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: <a href="#">37731000</a> ). Catalyzes formation of histone H4 acetyl-methylated at 'Lys-5' and 'Lys-12' (H4K5acme and H4K12acme, respectively) (PubMed: <a href="#">37731000</a> ). Also functions as acetyltransferase for non-histone targets, such as ALX1, HDAC1, PRMT1,

SIRT2, STAT3 or GLUL (PubMed:[12929931](#), PubMed:[15653507](#), PubMed:[16285960](#), 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 or propanoyl-CoA (propionyl-CoA), and is able to mediate protein crotonylation, butyrylation, 2-hydroxyisobutyrylation, lactylation or propionylation, respectively (PubMed:[17267393](#), PubMed:[25818647](#), PubMed:[29775581](#), PubMed:[31645732](#)). 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

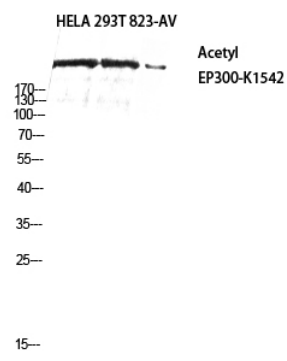
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## Images

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Western blot analysis of HELA 293T 823-AV using



Acetyl-p300 (K1542) antibody. Antibody was diluted at 1:2000. Secondary antibody was diluted at 1:20000

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