

P300 (EP300) Antibody (Center) Blocking peptide
Synthetic peptide
Catalog # BP1080a**Specification**

P300 (EP300) Antibody (Center) Blocking peptide - Product InformationPrimary Accession [Q09472](#)**P300 (EP300) Antibody (Center) Blocking peptide - Additional Information****Gene ID** 2033**Other Names**

Histone acetyltransferase p300, p300 HAT, E1A-associated protein p300, EP300, P300

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP1080a](/product/products/AP1080a) was selected from the Center region of human EP300. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

P300 (EP300) Antibody (Center) Blocking peptide - 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: [23415232](http://www.uniprot.org/citations/23415232), PubMed: [23934153](http://www.uniprot.org/citations/23934153), PubMed: [8945521](http://www.uniprot.org/citations/8945521)). Acetylates all four core histones in nucleosomes (PubMed: [23415232](http://www.uniprot.org/citations/23415232), PubMed: [23934153](http://www.uniprot.org/citations/23934153), PubMed: [8945521](http://www.uniprot.org/citations/8945521)). Histone acetylation gives an epigenetic tag for transcriptional activation (PubMed: [23415232](http://www.uniprot.org/citations/23415232), PubMed: [23934153](http://www.uniprot.org/citations/23934153), PubMed: [8945521](http://www.uniprot.org/citations/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). Also functions as acetyltransferase for non-histone targets, such as ALX1, HDAC1, PRMT1, SIRT2 or STAT3 (PubMed:12929931, PubMed:16285960, PubMed:15653507, PubMed:16762839, PubMed:18722353, PubMed:18782771). 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:16285960, PubMed:15653507, 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). 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).

P300 (EP300) Antibody (Center) Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

P300 (EP300) Antibody (Center) Blocking peptide - Images**P300 (EP300) Antibody (Center) Blocking peptide - Background**

EP300 encodes the adenovirus E1A-associated cellular p300 transcriptional co-activator protein. p300 is related by sequence to CBP (CREB-binding protein [CREB: cyclic-AMP responsive element binding protein]), and like CBP 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.

P300 (EP300) Antibody (Center) Blocking peptide - References

Cheng, J., et al., J. Biol. Chem. 280(15):14492-14498 (2005).Roelfsema, J.H., et al., Am. J. Hum. Genet. 76(4):572-580 (2005).Wang, R., et al., J. Biol. Chem. 280(12):11528-11534 (2005).Bouras, T., et al., J. Biol. Chem. 280(11):10264-10276 (2005).Debes, J.D., et al., Cancer Res. 65(3):708-712 (2005).