

EP300 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1213a

Specification

EP300 Antibody - Product Information

| | |
|-------------------|------------------------|
| Application | WB |
| Primary Accession | Q09472 |
| Reactivity | Human |
| Host | Mouse |
| Clonality | Monoclonal |
| Isotype | IgG1 |

Description

EP300: E1A binding protein p300. This gene encodes the adenovirus E1A-associated cellular p300 transcriptional co-activator protein. It functions as histone acetyltransferase that regulates transcription via chromatin remodeling and is important in the processes of cell proliferation and differentiation. It mediates cAMP-gene regulation by binding specifically to phosphorylated CREB protein. This gene 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. Defects in this gene are a cause of Rubinstein-Taybi syndrome and may also play a role in epithelial cancer.

Immunogen

Purified recombinant fragment of EP300 expressed in E. Coli.

Formulation

Ascitic fluid containing 0.03% sodium azide.

EP300 Antibody - Additional Information

Gene ID 2033

Other Names

Histone acetyltransferase p300, p300 HAT, 2.3.1.48, E1A-associated protein p300, EP300, P300

Dilution

WB~~1/500 - 1/2000

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

EP300 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

EP300 Antibody - 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](http://www.uniprot.org/citations/23415232)). Mediates acetylation of histone H3 at 'Lys-18' and 'Lys-27' (H3K18ac and H3K27ac, respectively) (PubMed: [21131905](http://www.uniprot.org/citations/21131905), PubMed: [23911289](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/37731000)). Catalyzes formation of histone H4 acetyl-methylated at 'Lys-5' and 'Lys-12' (H4K5acme and H4K12acme, respectively) (PubMed: [37731000](http://www.uniprot.org/citations/37731000)). Also functions as acetyltransferase for non-histone targets, such as ALX1, HDAC1, PRMT1, SIRT2, STAT3 or GLUL (PubMed: [12929931](http://www.uniprot.org/citations/12929931), PubMed: [15653507](http://www.uniprot.org/citations/15653507), PubMed: [16285960](http://www.uniprot.org/citations/16285960), PubMed: [16762839](http://www.uniprot.org/citations/16762839), PubMed: [18722353](http://www.uniprot.org/citations/18722353), PubMed: [18782771](http://www.uniprot.org/citations/18782771), PubMed: [26990986](http://www.uniprot.org/citations/26990986)). Acetylates 'Lys-131' of ALX1 and acts as its coactivator (PubMed: [12929931](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/11511361), PubMed: [15448695](http://www.uniprot.org/citations/15448695)). Promotes chromatin acetylation in heat shock responsive HSP genes during the heat shock response (HSR), thereby stimulating HSR transcription (PubMed: [18451878](http://www.uniprot.org/citations/18451878)). Acetylates HDAC1 leading to its inactivation and modulation of transcription (PubMed: [16762839](http://www.uniprot.org/citations/16762839)). Acetylates 'Lys-247' of EGR2 (By similarity). Acts as a TFAP2A-mediated transcriptional coactivator in presence of CITED2 (PubMed: [12586840](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/14752053)). Can also mediate transcriptional repression. Acetylates FOXO1 and enhances its transcriptional activity (PubMed: [15890677](http://www.uniprot.org/citations/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). 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).

EP300 Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

EP300 Antibody - Images

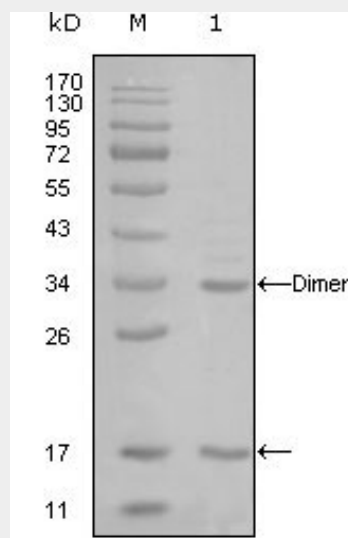


Figure 1: Western blot analysis using EP300 mouse mAb against truncated EP300-His recombinant protein (1).

EP300 Antibody - References

1. J Biol Chem. 2007 Mar 30;282(13):9678-87.
2. Mol Cell Biol. 2008 Feb;28(4):1383-92.