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p300 Polyclonal Antibody

Catalog # AP73875

Product Information

Application	IF, ICC, WB, IHC-P, E
Primary Accession	Q09472
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	IF~~IF: 1:50-200 Western Blot: 1/500 - 1/2000. IHC-p: 1:100-1:300. ELISA: 1/10000. Not yet tested in other applications. ICC~~N/A WB~~IF: 1:50-200 Western Blot: 1/500 - 1/2000. IHC-p: 1:100-1:300. ELISA: 1/10000. Not yet tested in other applications. IHC-P~~IF: 1:50-200 Western Blot: 1/500 - 1/2000. IHC-p: 1:100-1:300. ELISA: 1/10000. Not yet tested in other applications. E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

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, 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 CTPS1, 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,

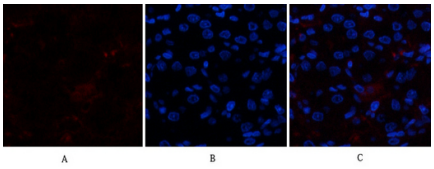
	PubMed:25818647, PubMed:29775581, PubMed:31645732, PubMed:34545082). Acts as a histone crotonyltransferase; crotonylation marks active promoters and enhancers and confers resistance to transcriptional repressors (PubMed:25818647). Histone crotonyltransferase activity is dependent on the concentration 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 relocalizes from the cytoplasm to the nucleus. Colocalizes with ROCK2 in the nucleus (PubMed:12929931). Localizes to sites of DNA damage (PubMed:25593309).

Background

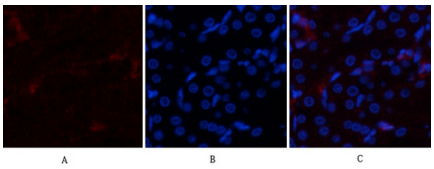
Functions as histone acetyltransferase and regulates transcription via chromatin remodeling (PubMed:23415232, PubMed:23934153, PubMed:8945521). Acetylates all four core histones in nucleosomes. Histone acetylation gives an epigenetic tag for transcriptional activation (PubMed:23415232, PubMed:23934153, PubMed:8945521). 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) (PubMed:23911289). Also functions as acetyltransferase for non-histone targets, such as ALX1, HDAC1, PRMT1 or SIRT2 (PubMed:12929931, PubMed:16762839, PubMed:18722353). Acetylates 'Lys-131' of ALX1 and acts as its coactivator (PubMed:12929931). Acetylates SIRT2 and is proposed to indirectly increase the transcriptional activity of TP53 through acetylation and subsequent attenuation of SIRT2 deacetylase function (PubMed:18722353). Acetylates HDAC1 leading to its inactivation and modulation of transcription (PubMed:16762839). 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. Can also mediate transcriptional repression. Acetylates FOXO1 and enhances its transcriptional activity (PubMed:15890677). Acetylates BCL6 wich 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 degragation, this mechanism may be involved in CD4/CD8 lineage differentiation (PubMed:20810990). In addition to protein acetyltransferase, can use different acyl-CoA substrates, such as (2E)-butenoyl-CoA (crotonyl-CoA), butanoyl-CoA (butyryl- CoA) or propanoyl-CoA (propionyl-CoA), and is able to mediate protein crotonylation, butyrylation or propionylation, respectively (PubMed:25818647, PubMed:17267393). 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 (E)-but-2-enoyl-CoA (crotonyl-CoA) concentration is low (PubMed:25818647).

Also acts as a histone butyryltransferase; butyrylation marks active promoters (PubMed:17267393). Functions as a transcriptional coactivator for SMAD4 in the TGF-beta signaling pathway (PubMed:25514493). Acetylates PCK1 and promotes PCK1 anaplerotic activity (PubMed:30193097).

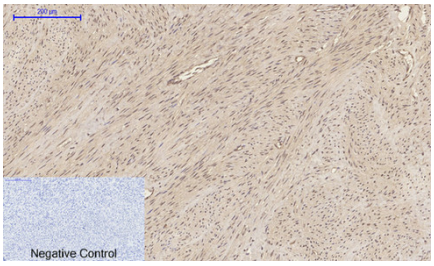
Images



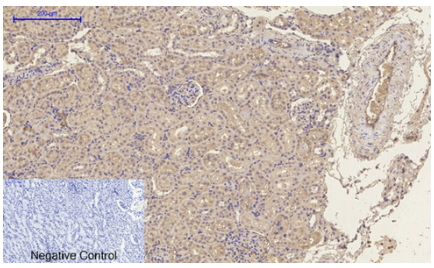
Immunofluorescence analysis of rat-kidney tissue. 1,p300 Polyclonal Antibody(red) was diluted at 1:200(4°C,overnight). 2, Cy3 labled Secondary antibody was diluted at 1:300(room temperature, 50min).3, Picture B: DAPI(blue) 10min. Picture A:Target. Picture B: DAPI. Picture C: merge of A+B



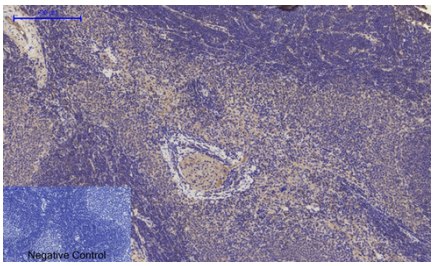
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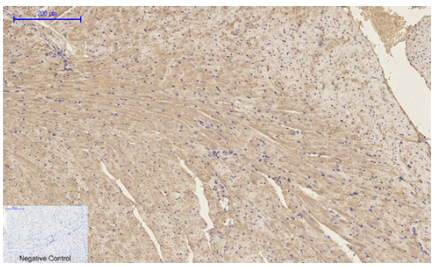
Immunohistochemical analysis of paraffin-embedded Human-uterus tissue. 1,p300 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Rat-kidney tissue. 1,p300 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

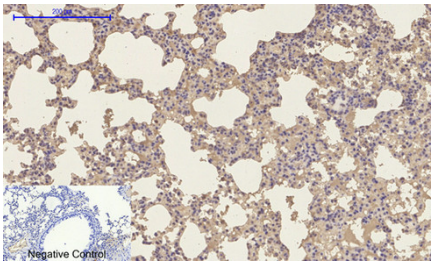


Immunohistochemical analysis of paraffin-embedded Rat-spleen tissue. 1,p300 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

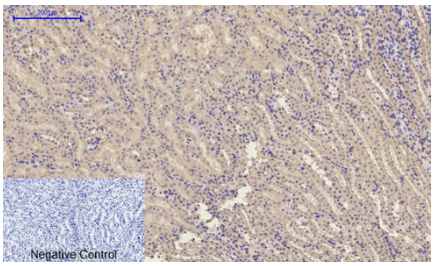


Immunohistochemical analysis of paraffin-embedded Mouse-heart tissue. 1,p300 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

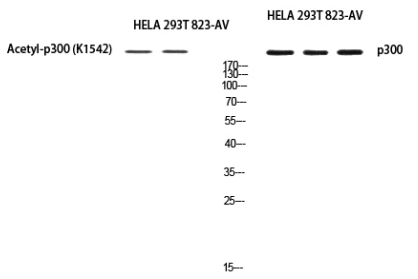
Immunohistochemical analysis of paraffin-embedded Mouse-lung tissue. 1,p300 Polyclonal Antibody was



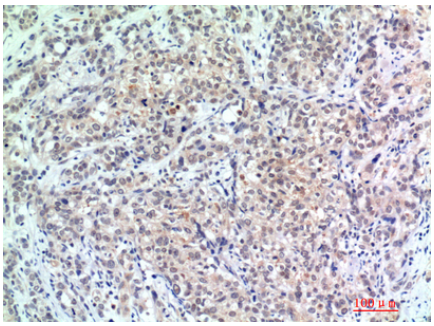
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Immunohistochemical analysis of paraffin-embedded Mouse-kidney tissue. 1,p300 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Western blot analysis of HELA 293T 823-AV using EP300 antibody. Antibody was diluted at 1:1000. Secondary antibody was diluted at 1:20000



Immunohistochemical analysis of paraffin-embedded human-breast-cancer, antibody was diluted at 1:200

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.