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UBE3A Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2154B

Product Information

Application	WB, IHC-P, IF, FC, E
Primary Accession	Q05086
Reactivity	Mouse, Human
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB4440
Calculated MW	100688
Antigen Region	836-865

Additional Information

Gene ID	7337
Other Names	Ubiquitin-protein ligase E3A, 632-, E6AP ubiquitin-protein ligase, Human papillomavirus E6-associated protein, Oncogenic protein-associated protein E6-AP, Renal carcinoma antigen NY-REN-54, UBE3A, E6AP, EPVE6AP, HPVE6A
Target/Specificity	This UBE3A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 836-865 amino acids from the C-terminal region of human UBE3A.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	UBE3A Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UBE3A (HGNC:12496)
Function	E3 ubiquitin-protein ligase which accepts ubiquitin from an E2

	ubiquitin-conjugating enzyme in the form of a thioester and transfers it to its substrates (PubMed:10373495, PubMed:16772533, PubMed:19204938, PubMed:19233847, PubMed:19325566, PubMed:19591933, PubMed:22645313, PubMed:24273172, PubMed:24728990, PubMed:30020076). Several substrates have been identified including the BMAL1, ARC, LAMTOR1, RAD23A and RAD23B, MCM7 (which is involved in DNA replication), annexin A1, the PML tumor suppressor, and the cell cycle regulator CDKN1B (PubMed:10373495, PubMed:19204938, PubMed:19325566, PubMed:19591933, PubMed:22645313, PubMed:24728990, PubMed:30020076). Additionally, may function as a cellular quality control ubiquitin ligase by helping the degradation of the cytoplasmic misfolded proteins (PubMed:19233847). Finally, UBE3A also promotes its own degradation in vivo. Plays an important role in the regulation of the circadian clock: involved in the ubiquitination of the core clock component BMAL1, leading to its proteasomal degradation (PubMed:24728990). Acts as transcriptional coactivator of progesterone receptor PGR upon progesterone hormone activation (PubMed:16772533). Acts as a regulator of synaptic development by mediating ubiquitination and degradation of ARC (By similarity). Required for synaptic remodeling in neurons by mediating ubiquitination and degradation of LAMTOR1, thereby limiting mTORC1 signaling and activity-dependent synaptic remodeling (By similarity). Synergizes with WBP2 in enhancing PGR activity (PubMed:16772533).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:O08759}. Nucleus {ECO:0000250|UniProtKB:O08759}

Background

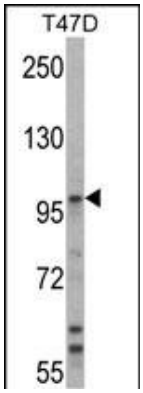
UBE3A interacts with the E6 protein of the cancer-associated human papillomavirus types 16 and 18. The E6/E6-AP complex binds to and targets the p53 tumor-suppressor protein for ubiquitin-mediated proteolysis. It is an E3 ubiquitin-protein ligase which accepts ubiquitin from an E2 ubiquitin-conjugating enzyme in the form of a thioester and then directly transfers the ubiquitin to targeted substrates. It can target itself for ubiquitination in vitro and efficiently promotes its own degradation in vivo. It appears that only unmodified E6-AP molecules can bind efficiently to p53 in the presence of the HPV E6 oncoprotein. UBE3A binds UBQLN1 and UBQLN2. Defects in UBE3A are a cause of Angelman syndrome (AS) [MIM:105830]; also known as 'happy puppet syndrome'. AS is characterized by features of severe motor and intellectual retardation, microcephaly, ataxia, frequent jerky limb movements and flapping of the arms and hands, hypotonia, hyperactivity, hypopigmentation, seizures, absence of speech, frequent smiling and episodes of paroxysmal laughter, and an unusual facies characterized by macrostomia, a large mandible and open-mouthed expression, a great propensity for protruding the tongue ('tongue thrusting'), and an occipital groove. UBE3A contains 1 HECT-type E3 ubiquitin-protein ligase domain.

References

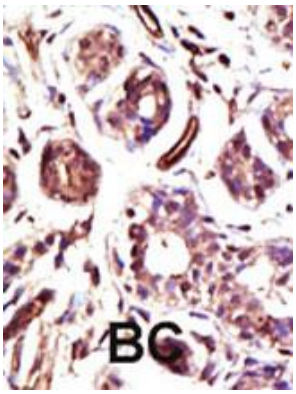
Be, X., et al., Biochemistry 40(5):1293-1299 (2001).
Kleijnen, M.F., et al., Mol. Cell 6(2):409-419 (2000).
Huang, L., et al., Science 286(5443):1321-1326 (1999).
Nuber, U., et al., Eur. J. Biochem. 254(3):643-649 (1998).
Malzac, P., et al., Am. J. Hum. Genet. 62(6):1353-1360 (1998).

Images

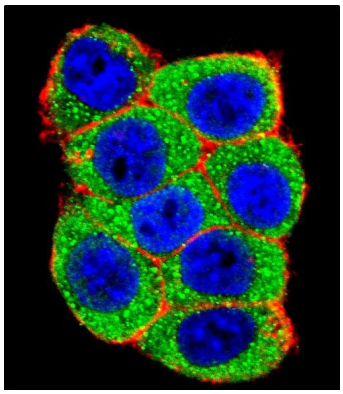
Western blot analysis of UBE3A Antibody (C-term) (Cat. #AP2154b) in T47D cell line lysates (35ug/lane).UBE3A(arrow) was detected using the purified



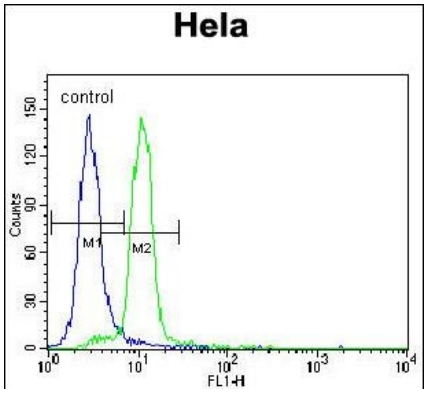
Pab.



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



Confocal immunofluorescent analysis of UBE3A Antibody (C-term)(Cat#AP2154b) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).



UBE3A Antibody (C-term) (Cat. #AP2154b) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Cognition and Synaptic-Plasticity Related Changes in Aged Rats Supplemented with 8- and 10-Carbon Medium Chain Triglycerides.

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