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Mdm2 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1254A

Product Information

Application	WB, IHC-P, E
Primary Accession	Q00987
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	55233
Antigen Region	393-424

Additional Information

Gene ID	4193
Other Names	E3 ubiquitin-protein ligase Mdm2, 632-, Double minute 2 protein, Hdm2, Oncoprotein Mdm2, p53-binding protein Mdm2, MDM2
Target/Specificity	This Mdm2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 393-424 amino acids from the C-terminal region of human Mdm2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	Mdm2 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MDM2
Function	E3 ubiquitin-protein ligase that mediates ubiquitination of p53/TP53, leading to its degradation by the proteasome (PubMed:29681526). Inhibits p53/TP53- and p73/TP73-mediated cell cycle arrest and apoptosis by binding its transcriptional activation domain. Also acts as a ubiquitin ligase E3 toward itself and ARRB1. Permits the nuclear export of p53/TP53. Promotes

	proteasome-dependent ubiquitin- independent degradation of retinoblastoma RB1 protein. Inhibits DAXX- mediated apoptosis by inducing its ubiquitination and degradation. Component of the TRIM28/KAP1-MDM2-p53/TP53 complex involved in stabilizing p53/TP53. Also a component of the TRIM28/KAP1-ERBB4-MDM2 complex which links growth factor and DNA damage response pathways. Mediates ubiquitination and subsequent proteasome degradation of DYRK2 in nucleus. Ubiquitinates IGF1R and SNAI1 and promotes them to proteasomal degradation (PubMed:12821780, PubMed:15053880, PubMed:15195100, PubMed:15632057, PubMed:16337594, PubMed:17290220, PubMed:19098711, PubMed:19219073, PubMed:19837670, PubMed:19965871, PubMed:20173098, PubMed:20385133, PubMed:20858735, PubMed:22128911). Ubiquitinates DCX, leading to DCX degradation and reduction of the dendritic spine density of olfactory bulb granule cells (By similarity). Ubiquitinates DLG4, leading to proteasomal degradation of DLG4 which is required for AMPA receptor endocytosis (By similarity). Negatively regulates NDUFS1, leading to decreased mitochondrial respiration, marked oxidative stress, and commitment to the mitochondrial pathway of apoptosis (PubMed:30879903). Binds NDUFS1 leading to its cytosolic retention rather than mitochondrial localization resulting in decreased supercomplex assembly (interactions between complex I and complex III), decreased complex I activity, ROS production, and apoptosis (PubMed:30879903).
Cellular Location	Nucleus, nucleoplasm. Cytoplasm. Nucleus, nucleolus. Nucleus. Note=Expressed predominantly in the nucleoplasm. Interaction with ARF(P14) results in the localization of both proteins to the nucleolus. The nucleolar localization signals in both ARF(P14) and MDM2 may be necessary to allow efficient nucleolar localization of both proteins. Colocalizes with RASSF1 isoform A in the nucleus
Tissue Location	Ubiquitous. Isoform Mdm2-A, isoform Mdm2-B, isoform Mdm2-C, isoform Mdm2-D, isoform Mdm2-E, isoform Mdm2-F and isoform Mdm2-G are observed in a range of cancers but absent in normal tissues

Background

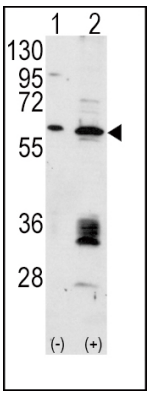
MDM2 is a target of the transcription factor tumor protein p53. The encoded protein is a nuclear phosphoprotein that binds and inhibits transactivation by tumor protein p53, as part of an autoregulatory negative feedback loop. Overexpression of MDM2 can result in excessive inactivation of tumor protein p53, diminishing its tumor suppressor function. This protein has E3 ubiquitin ligase activity, which targets tumor protein p53 for proteasomal degradation. This protein also affects the cell cycle,apoptosis, and tumorigenesis through interactions with other proteins, including retinoblastoma 1 and ribosomal protein L5.

References

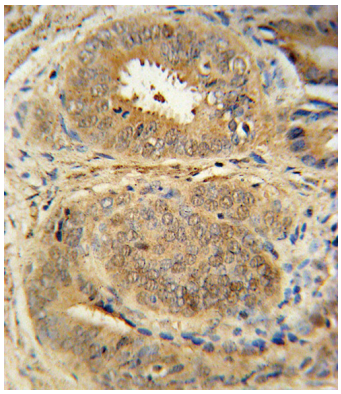
Burch, L.R., et al., J. Mol. Biol. 337(1):115-128 (2004). Schon, O., et al., J. Mol. Biol. 336(1):197-202 (2004). Mantesso, A., et al., J. Oral Pathol. Med. 33(2):96-101 (2004). Shmueli, A., et al., Mol. Cell 13(1):4-5 (2004). Xia, L., et al., Cancer Res. 64(1):221-228 (2004).

Images

Western blot analysis of MDM2 (arrow) using rabbit polyclonal Mdm2 Antibody (C-term) (Cat.#AP1254a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or



transiently transfected with the MDM2 gene (Lane 2) (Origene Technologies).



Mdm2 Antibody (C-term) (Cat.#AP1254a) immunohistochemistry analysis in formalin fixed and paraffin embedded human prostate carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the Mdm2 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

Citations

- Introduction of the MDM2 T309G Mutation in Primary Human Retinal Epithelial Cells Enhances Experimental Proliferative Vitreoretinopathy.
- The Clustered, Regularly Interspaced, Short Palindromic Repeats-associated Endonuclease 9 (CRISPR/Cas9)-created MDM2 T309G Mutation Enhances Vitreous-induced Expression of MDM2 and Proliferation and Survival of Cells.
- P53-Derived peptides conjugation to PEI: an approach to producing versatile and highly efficient targeted gene delivery carriers into cancer cells.
- RASSF10 suppresses colorectal cancer growth by activating P53 signaling and sensitizes colorectal cancer cell to docetaxel.
- The deubiquitinating enzyme USP2a regulates the p53 pathway by targeting Mdm2.