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PPM1D Rabbit pAb

Catalog # AP97268

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	O15297
Other Accession	O15297
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	66675
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human PPM1D
Epitope Specificity	471-570/605
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the PP2C family. Contains 1 PP2C-like domain.
SUBUNIT	Interacts with CHEK1 and CHEK2; dephosphorylates them.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	PPM1D (Wip) is a serine/threonine phosphatase implicated in cell cycle control, spermatogenesis, and lymphoid cell function. The predicted 605-amino acid PPM1D protein contains 2 putative nuclear localization signals and 3 regions conserved in serine/threonine PP2C phosphatases, as well as characteristics of a type 2C phosphatase, including magnesium dependence and relative insensitivity to okadaic acid. PPM1D expression is induced in response to ionizing radiation in a p53-dependent manner. The accumulation of PPM1D mRNA following ionizing radiation is rapid and transient, and PPM1D protein is localized to the nucleus. PPM1D may contribute to growth inhibitory pathways activated in response to DNA damage in a p53-dependent manner. PPM1D inhibits phosphorylation of the p38 mitogen-activated (MAP)kinase protein. Through p38 MAPK, PPM1D modulates the CDKN2A tumor-suppressor locus. This gene is located in a chromosomal region known to be amplified in breast cancer, (located at 17q22-q23), is amplified in human breast tumor cell lines and in approximately 11% of primary breast tumors, and appears to lead to cell transformation by abrogating p53 tumor suppressor activity. Inactivation of the p38 MAPK through PPM1D overexpression resulting from PPM1D amplification may contributes to the development of human cancers by suppressing p53 activation. PPM1D null mice have increased susceptibility to pathogens and reduced male fertility and longevity.

Additional Information

Gene ID	8493

Other Names	IDDGIP; JDVS; PP2C-DELTA; WIP1; XELAEV_180152921mg; ppm1d; wu:fj44c08; zgc:55836; zgc:77316; PPM1D_HUMAN; Protein phosphatase 2C isoform delta (PP2C-delta); Protein phosphatase magnesium-dependent 1 delta; p53-induced protein phosphatase 1; 3.1.3.16; Q5RI25_MOUSE; PPM1D_MOUSE; protein phosphatase, Mg2+/Mn2+ dependent 1D; protein phosphatase 1D magnesium-dependent, delta isoform; protein phosphatase, Mg2+/Mn2+ dependent, 1D; wild-type p53-induced phosphatase 1; protein phosphatase 2C, delta isoform
Dilution	IHC-P=1:400-800,IHC-F=1:400-800,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	PPM1D
Synonyms	WIP1
Function	Involved in the negative regulation of p53 expression (PubMed: 23242139). Required for the relief of p53-dependent checkpoint mediated cell cycle arrest. Binds to and dephosphorylates 'Ser-15' of TP53 and 'Ser-345' of CHEK1 which contributes to the functional inactivation of these proteins (PubMed:15870257, PubMed:16311512). Mediates MAPK14 dephosphorylation and inactivation (PubMed:21283629). Is also an important regulator of global heterochromatin silencing and critical in maintaining genome integrity (By similarity).
Cellular Location	Nucleus. Cytoplasm, cytosol
Tissue Location	Expressed in fetal and adult brain. Also detected in fetal liver and skeletal muscle, but not in their adult counterparts.

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