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EPM2A Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1453b

Product Information

Application	WB, IHC-P, E
Primary Accession	O95278
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB12687
Calculated MW	37158
Antigen Region	288-317

Additional Information

Gene ID	7957
Other Names	Laforin, 313-, Glucan phosphatase, Lafora PTPase, LAFPTPase, EPM2A
Target/Specificity	This EPM2A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 288-317 amino acids from the C-terminal region of human EPM2A.
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	EPM2A Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	EPM2A
Function	Plays an important role in preventing glycogen hyperphosphorylation and the formation of insoluble aggregates, via its activity as glycogen phosphatase, and by promoting the ubiquitination of proteins involved in glycogen metabolism via its interaction with the E3 ubiquitin ligase NHLRC1/malin. Shows strong phosphatase activity towards complex

carbohydrates in vitro, avoiding glycogen hyperphosphorylation which is associated with reduced branching and formation of insoluble aggregates (PubMed:16901901, PubMed:23922729, PubMed:25538239, PubMed:25544560, PubMed:26231210). Dephosphorylates phosphotyrosine and synthetic substrates, such as para- nitrophenylphosphate (pNPP), and has low activity with phosphoserine and phosphothreonine substrates (in vitro) (PubMed:11001928, PubMed:11220751, PubMed:11739371, PubMed:14532330, PubMed:14722920, PubMed:16971387, PubMed:18617530, PubMed:22036712, PubMed:23922729). Has been shown to dephosphorylate MAPT (By similarity). Forms a complex with NHLRC1/malin and HSP70, which suppresses the cellular toxicity of misfolded proteins by promoting their degradation through the ubiquitin-proteasome system (UPS). Acts as a scaffold protein to facilitate PPP1R3C/PTG ubiquitination by NHLRC1/malin (PubMed:23922729). Also promotes proteasome-independent protein degradation through the macroautophagy pathway (PubMed:20453062).

Cellular Location

Cytoplasm. Note=Under glycogenolytic conditions localizes to the nucleus [Isoform 2]: Cytoplasm. Endoplasmic reticulum membrane; Peripheral membrane protein; Cytoplasmic side. Cell membrane. Nucleus. Note=Also found in the nucleus. [Isoform 5]: Cytoplasm. Nucleus

Tissue Location

Expressed in heart, skeletal muscle, kidney, pancreas and brain. Isoform 4 is also expressed in the placenta

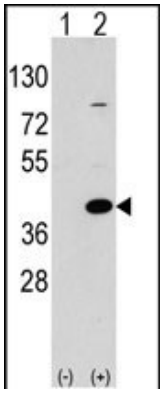
Background

EPM2A is a dual-specificity phosphatase that associates with polyribosomes. The encoded protein may be involved in the regulation of glycogen metabolism. Mutations have been associated with myoclonic epilepsy of Lafora.

References

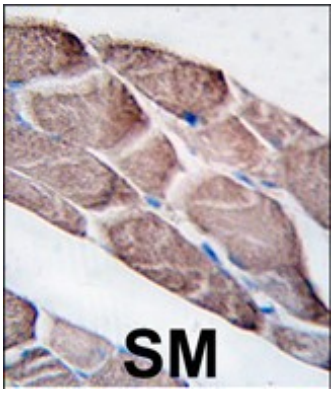
Minassian B.A., Nat. Genet. 20:171-174(1998).
Ganesh S., Hum. Mol. Genet. 9:2251-2261(2000).

Images



Western blot analysis of EPM2A (arrow) using rabbit polyclonal EPM2A Antibody (C-term) (Cat# AP1453b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the EPM2A gene (Lane 2) (Origene Technologies).

Formalin-fixed and paraffin-embedded human skeletal muscle tissue reacted with EPM2A antibody (C-term) (Cat.#AP1453b), 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.