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EPM2A / Laforin Antibody (C-Terminus)

Rabbit Polyclonal Antibody
Catalog # ALS15656

Specification

EPM2A / Laforin Antibody (C-Terminus) - Product Information

Application	**IHC, ICC, IF, WB**
Primary Accession	O95278
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**37kDa KDa**

EPM2A / Laforin Antibody (C-Terminus) - Additional Information

Gene ID 7957

Other Names
Laforin, 3.1.3.-, 3.1.3.16, 3.1.3.48, Glucan phosphatase, Lafora PTPase, LAFPTPase, EPM2A

Target/Specificity
Human EPM2A. At least four isoforms of EPM2A are known to exist; this antibody will detect all but the shortest isoform.

Reconstitution & Storage
Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.

Precautions
EPM2A / Laforin Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

EPM2A / Laforin Antibody (C-Terminus) - 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:26231210, PubMed:25538239, PubMed:25544560). 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:16971387, PubMed:18617530, PubMed:22036712, PubMed:23922729, PubMed:14722920). 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

EPM2A / Laforin Antibody (C-Terminus) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

EPM2A / Laforin Antibody (C-Terminus) - Images

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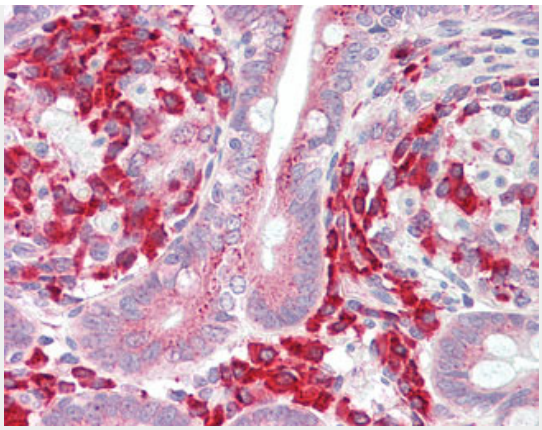
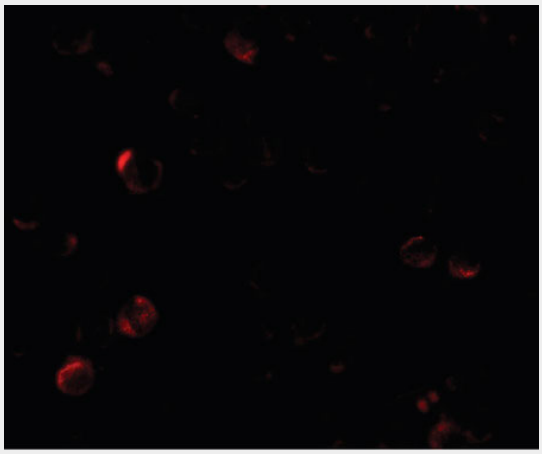


Anti-EPM2A / Laforin antibody IHC staining of human small intestine.

Immunocytochemistry of EPM2A in SW480 cells with EPM2A antibody at 2.5 ug/ml.



Immunofluorescence of EPM2A in SW480 cells with EPM2A antibody at 5 ug/ml.

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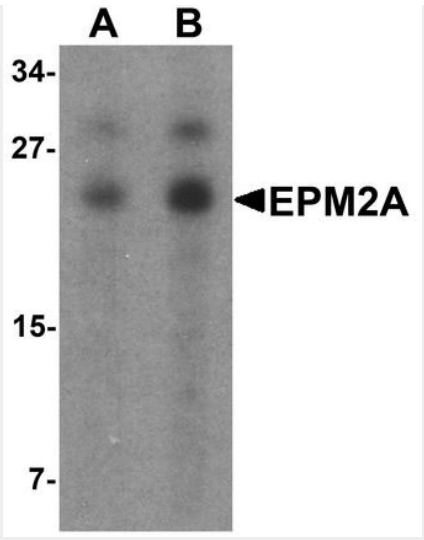

Western blot analysis of SW480 in SW480 cell lysate with EPM2A antibody at (A) 1 and (B) 2 ug/ml.

EPM2A / Laforin Antibody (C-Terminus) - Background

Has both dual-specificity protein phosphatase and glucan phosphatase activities. Together with the E3 ubiquitin ligase NHLRC1/malin, appears to be involved in the clearance of toxic polyglucosan and protein aggregates via multiple pathways. Dephosphorylates phosphotyrosine, phosphoserine and phosphothreonine substrates in vitro. Has also been shown to dephosphorylate MAPT. Shows strong phosphatase activity towards complex carbohydrates in vitro, avoiding glycogen hyperphosphorylation which is associated with reduced branching and formation of insoluble aggregates. 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. Also promotes proteasome-independent protein degradation through the macroautophagy pathway. Isoform 2, an inactive phosphatase, could function as a dominant-negative regulator for the phosphatase activity of isoform 1.

EPM2A / Laforin Antibody (C-Terminus) - References

Minassian B.A.,et al.Nat. Genet. 20:171-174(1998).
Ganesh S.,et al.Hum. Mol. Genet. 9:2251-2261(2000).
Lee J.R.,et al.Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases.
Ganesh S.,et al.Submitted (NOV-2001) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).