

**EPM2A / Laforin Antibody (Internal)**  
**Goat Polyclonal Antibody**  
**Catalog # ALS14571****Specification**

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**EPM2A / Laforin Antibody (Internal) - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">O95278</a>
Reactivity	Human, Mouse, Rat, Rabbit, Monkey, Pig, Bovine, Dog
Host	Goat
Clonality	Polyclonal
Calculated MW	37kDa KDa

**EPM2A / Laforin Antibody (Internal) - 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. This antibody is expected to recognize isoform a (NP\_005661.1) only.

**Reconstitution & Storage**

Store at -20°C. Minimize freezing and thawing.

**Precautions**

EPM2A / Laforin Antibody (Internal) is for research use only and not for use in diagnostic or therapeutic procedures.

**EPM2A / Laforin Antibody (Internal) - 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](http://www.uniprot.org/citations/16901901) target="\_blank">16901901</a>, PubMed: [23922729](http://www.uniprot.org/citations/23922729) target="\_blank">23922729</a>, PubMed: [26231210](http://www.uniprot.org/citations/26231210) target="\_blank">26231210</a>, PubMed: [25538239](http://www.uniprot.org/citations/25538239) target="\_blank">25538239</a>, PubMed: [25544560](http://www.uniprot.org/citations/25544560) target="\_blank">25544560</a>). Dephosphorylates phosphotyrosine and synthetic substrates, such as para- nitrophenylphosphate (pNPP), and has low activity with phosphoserine and

phosphothreonine substrates (in vitro) (PubMed:<a href="http://www.uniprot.org/citations/11001928" target="\_blank">11001928</a>, PubMed:<a href="http://www.uniprot.org/citations/11220751" target="\_blank">11220751</a>, PubMed:<a href="http://www.uniprot.org/citations/11739371" target="\_blank">11739371</a>, PubMed:<a href="http://www.uniprot.org/citations/14532330" target="\_blank">14532330</a>, PubMed:<a href="http://www.uniprot.org/citations/16971387" target="\_blank">16971387</a>, PubMed:<a href="http://www.uniprot.org/citations/18617530" target="\_blank">18617530</a>, PubMed:<a href="http://www.uniprot.org/citations/22036712" target="\_blank">22036712</a>, PubMed:<a href="http://www.uniprot.org/citations/23922729" target="\_blank">23922729</a>, PubMed:<a href="http://www.uniprot.org/citations/14722920" target="\_blank">14722920</a>). 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:<a href="http://www.uniprot.org/citations/23922729" target="\_blank">23922729</a>). Also promotes proteasome-independent protein degradation through the macroautophagy pathway (PubMed:<a href="http://www.uniprot.org/citations/20453062" target="\_blank">20453062</a>).

### 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

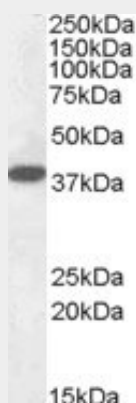
Expressed in heart, skeletal muscle, kidney, pancreas and brain. Isoform 4 is also expressed in the placenta

## EPM2A / Laforin Antibody (Internal) - Protocols

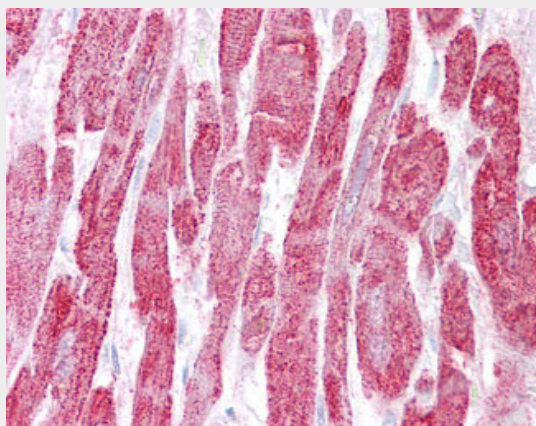
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## EPM2A / Laforin Antibody (Internal) - Images



Antibody (0.1 ug/ml) staining of Human Cerebellum lysate (35 ug protein in RIPA buffer).



Anti-EPM2A antibody IHC of human heart.

### **EPM2A / Laforin Antibody (Internal) - 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 (Internal) - 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).