

**EPB41 Polyclonal Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP55057****Specification**

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**EPB41 Polyclonal Antibody - Product Information**

Application	WB, IHC-P, IHC-F, IF, ICC, E
Primary Accession	<a href="#">P11171</a>
Reactivity	Rat, Pig, Recombinant Fragment, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	97 KDa
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human EPB41/4.1R
Epitope Specificity	751-864/864
Isotype	IgG
<b>Purity</b>	
affinity purified by Protein A	
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cytoplasm > cytoskeleton. Cytoplasm > cell cortex. Nucleus.
SIMILARITY	Contains 1 FERM domain.
SUBUNIT	Binds with a high affinity to glycophorin and with lower affinity to band III protein. Associates with the nuclear mitotic apparatus. Binds calmodulin, CENPJ and DLG1. Also found to associate with contractile apparatus and tight junctions. Phosphorylated at multiple sites by different protein kinases and each phosphorylation event selectively modulates the protein's functions. Phosphorylation on Tyr-660 reduces the ability of 4.1 to promote the assembly of the spectrin/actin/4.1 ternary complex.
Post-translational modifications	O-glycosylated; contains N-acetylglucosamine side chains in the C-terminal domain.
DISEASE	Defects in EPB41 are the cause of elliptocytosis type 1 (EL1) [MIM:611804]. EL1 is a Rhesus-linked form of hereditary elliptocytosis, a genetically heterogeneous, autosomal dominant, hematologic disorder. It is characterized by variable hemolytic anemia and elliptical or oval red cell shape. Defects in EPB41 are a cause of hereditary pyropoikilocytosis (HPP) [MIM:266140]. HPP is an autosomal

**recessive hematologic disorder characterized by hemolytic anemia, microspherocytosis, poikilocytosis, and an unusual thermal sensitivity of red cells. This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.**

#### Important Note

#### Background Descriptions

The 4.1 gene family encodes a group of multifunctional cytoskeletal proteins (4.1R, 4.1G, 4.1N and 4.1B), which are predominantly expressed in the nervous system. 4.1G is a protein that stabilizes spectrin-actin interactions and is associated with hereditary elliptocytosis. Red blood cell 4.1, designated 4.1R, is a multifunctional protein that is essential for maintaining erythrocyte shape and membrane mechanical properties. Both 4.1R and 4.1G are distributed in a unique pattern in the cerebellum and are believed to modulate the membrane mechanical properties of neuronal cells by promoting fodrin/actin association. 4.1N and 4.1B, designated EPB41L1 and EPB41L3, respectively, are strongly expressed in the brain. Antibodies to 4.1N have been reported to detect multiple forms, each enriched in postsynaptic density preparations relative to brain homogenate. Antibodies to 4.1B have been reported to detect two forms.

#### EPB41 Polyclonal Antibody - Additional Information

##### Gene ID 2035

##### Other Names

Protein 4.1, P4.1, 4.1R, Band 4.1, EPB4.1, Erythrocyte membrane protein band 4.1 {ECO:0000312|HGNC:HGNC:3377}, EPB41 ([HGNC:3377](http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=3377)), E41P

##### Dilution

**WB** ~ 1:1000  
**IHC-P** ~ N/A  
**IHC-F** ~ N/A  
**IF** ~ 1:50 ~ 200  
**ICC** ~ N/A  
**E** ~ N/A

##### Format

0.01M TBS(pH7.4), 0.09% (W/V) sodium azide and 50% Glycerol

##### 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.

#### EPB41 Polyclonal Antibody - Protein Information

**Name** EPB41 ([HGNC:3377](#))

**Synonyms** E41P

##### Function

Protein 4.1 is a major structural element of the erythrocyte membrane skeleton. It plays a key role in regulating membrane physical properties of mechanical stability and deformability by stabilizing spectrin-actin interaction. Recruits DLG1 to membranes. Required for dynein-dynactin complex

and NUMA1 recruitment at the mitotic cell cortex during anaphase (PubMed:<a href="http://www.uniprot.org/citations/23870127" target="\_blank">23870127</a>).

#### **Cellular Location**

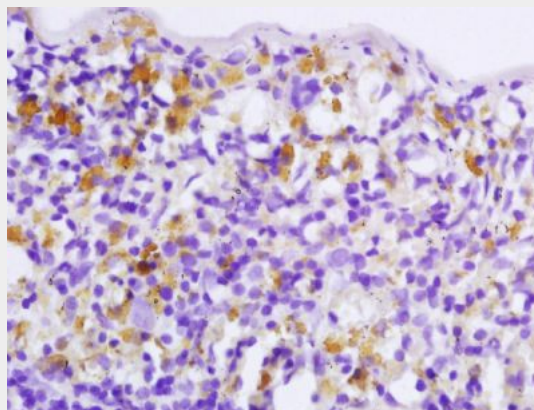
Cytoplasm, cytoskeleton. Cytoplasm, cell cortex. Nucleus

#### **EPB41 Polyclonal Antibody - 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](#)

#### **EPB41 Polyclonal Antibody - Images**



Tissue/cell: rat spleen tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer ( 0.01M, pH 6.0 ), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;

Incubation: Anti-EPB41 Polyclonal Antibody, Unconjugated(bs-13080R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining