

EPRS Antibody (N-term)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7565a**Specification**

EPRS Antibody (N-term) - Product Information

Application	WB, IHC-P,E
Primary Accession	P07814
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	170591
Antigen Region	285-314

EPRS Antibody (N-term) - Additional Information**Gene ID** 2058**Other Names**

Bifunctional glutamate/proline--tRNA ligase, Bifunctional aminoacyl-tRNA synthetase, Cell proliferation-inducing gene 32 protein, Glutamyl-prolyl-tRNA synthetase, Glutamate--tRNA ligase, Glutamyl-tRNA synthetase, GluRS, Proline--tRNA ligase, Prolyl-tRNA synthetase, EPRS, GLNS, PARS, QARS, QPRS

Target/Specificity

This EPRS antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 285-314 amino acids from the N-terminal region of human EPRS.

Dilution

WB~~1:8000
IHC-P~~1:10~50

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

EPRS Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

EPRS Antibody (N-term) - Protein Information**Name** EPRS1 ([HGNC:3418](#))

Function Multifunctional protein which primarily functions within the aminoacyl-tRNA synthetase multienzyme complex, also known as multisynthetase complex. Within the complex it catalyzes the attachment of both L-glutamate and L-proline to their cognate tRNAs in a two-step reaction where the amino acid is first activated by ATP to form a covalent intermediate with AMP. Subsequently, the activated amino acid is transferred to the acceptor end of the cognate tRNA to form L- glutamyl-tRNA(Glu) and L-prolyl-tRNA(Pro) (PubMed:[3290852](#), PubMed:[29576217](#), PubMed:[24100331](#), PubMed:[23263184](#), PubMed:[37212275](#)). Upon interferon-gamma stimulation, EPRS1 undergoes phosphorylation, causing its dissociation from the aminoacyl-tRNA synthetase multienzyme complex. It is recruited to form the GAIT complex, which binds to stem loop-containing GAIT elements found in the 3'-UTR of various inflammatory mRNAs, such as ceruloplasmin. The GAIT complex inhibits the translation of these mRNAs, allowing interferon-gamma to redirect the function of EPRS1 from protein synthesis to translation inhibition in specific cell contexts (PubMed:[15479637](#), PubMed:[23071094](#)). Furthermore, it can function as a downstream effector in the mTORC1 signaling pathway, by promoting the translocation of SLC27A1 from the cytoplasm to the plasma membrane where it mediates the uptake of long- chain fatty acid by adipocytes. Thereby, EPRS1 also plays a role in fat metabolism and more indirectly influences lifespan (PubMed:[28178239](#)).

Cellular Location

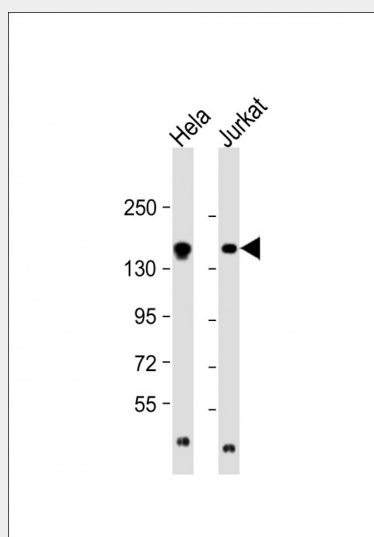
Cytoplasm, cytosol. Membrane; Peripheral membrane protein Note=Translocates from cytosol to membranes upon phosphorylation at Ser-999.

EPRS Antibody (N-term) - Protocols

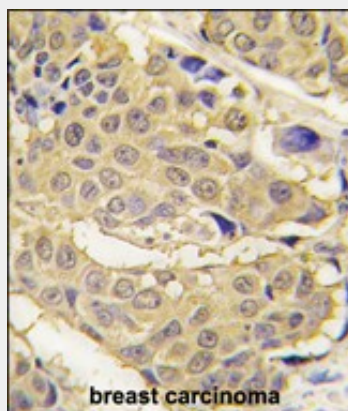
Provided below are standard protocols that you may find useful for product applications.

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

EPRS Antibody (N-term) - Images



All lanes : Anti-EPRS Antibody (N-term) at 1:8000 dilution Lane 1: Hela whole cell lysate Lane 2: Jurkat whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 171 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human breast carcinoma tissue reacted with EPRS antibody (N-term) (Cat.#AP7565a), 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.

EPRS Antibody (N-term) - Background

Aminoacyl-tRNA synthetases are a class of enzymes that charge tRNAs with their cognate amino acids. EPRS is a multifunctional aminoacyl-tRNA synthetase that catalyzes the aminoacylation of glutamic acid and proline tRNA species.

EPRS Antibody (N-term) - References

Jia,J., Mol. Cell 29 (6), 679-690 (2008)
Beausoleil,S.A., Nat. Biotechnol. 24 (10), 1285-1292 (2006)
Kato,T., Cancer Res. 65 (13), 5638-5646 (2005)
Sampath,P., Cell 119 (2), 195-208 (2004)

EPRS Antibody (N-term) - Citations

- [Bi-allelic Mutations in EPRS, Encoding the Glutamyl-Prolyl-Aminoacyl-tRNA Synthetase, Cause a Hypomyelinating Leukodystrophy.](#)