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EPRS Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP7565a

Specification

EPRS Antibody (N-term) Blocking Peptide - Product Information

Primary Accession P07814

EPRS Antibody (N-term) Blocking Peptide - Additional Information

Gene ID 2058

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

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP7565a was selected from the N-term region of human EPRS. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

EPRS Antibody (N-term) Blocking Peptide - 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:23263184, PubMed:24100331, PubMed:29576217, PubMed:<a

href="http://www.uniprot.org/citations/3290852" target="_blank">3290852, 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) Blocking Peptide - Protocols

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

- Blocking Peptides

EPRS Antibody (N-term) Blocking Peptide - Images

EPRS Antibody (N-term) Blocking Peptide - 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) Blocking Peptide - 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)