

EPRS Antibody

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W	Reactivity: H M R	Sensitivity: Endogenous	MW (kDa): 180	Source/Isotype: Rabbit	UniProt ID: #P07814	Entrez-Gene Id: 2058
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Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

EPRS Antibody recognizes endogenous levels of total EPRS protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro978 of human EPRS protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

EPRS (Glutamyl-prolyl-tRNA synthetase) is a bifunctional enzyme in the aminoacyl-tRNA ligase family that attaches the cognate amino acid to the corresponding tRNA for protein translation (1,2). EPRS usually resides in the tRNA multisynthetase complex (MSC) that may facilitate the delivery of aminoacylated tRNAs to the ribosome during protein synthesis (3,4). In monocytic cells, upon interferon (IFN)-gamma activation, EPRS becomes phosphorylated and is released from the MSC to form the so-called GAIT (IFN-Gamma-Activated Inhibitor of Translation) complex with NS1-associated protein (NSAP1), ribosomal protein L13a, and glyceraldehyde 3-phosphate dehydrogenase (GAPDH). The GAIT complex binds to a defined RNA element through EPRS in the 3' untranslated region (UTR) to inhibit translation of target transcripts, including vascular endothelial growth factor (VEGF)-A, ceruloplasmin, and several cytokines and their receptors. Thus, EPRS plays an important role in inflammation regulation (5-9).

Background References

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2. Ribas de Pouplana, L. and Schimmel, P. (2001) *Trends Biochem Sci* 26, 591-6.
3. Kyriacou, S.V. and Deutscher, M.P. (2008) *Mol Cell* 29, 419-27.
4. Hausmann, C.D. and Ibba, M. (2008) *FEMS Microbiol Rev* 32, 705-21.
5. Sampath, P. et al. (2004) *Cell* 119, 195-208.
6. Sampath, P. et al. (2003) *Mol Cell Biol* 23, 1509-19.
7. Ray, P.S. and Fox, P.L. (2007) *EMBO J* 26, 3360-72.
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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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