

# GlnRS (X-12): sc-100988

## BACKGROUND

Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. GlnRS (glutamyl-tRNA synthetase), also known as QARS, is a 775 amino acid member of the class I aminoacyl-tRNA synthetase family. Localized to the cytoplasm, GlnRS is part of a multi-protein complex composed of nine aminoacyl-tRNA synthetases that are specific for nine amino acids, namely Arg, Asp, Glu, Gln, Ile, Leu, Lys, Met and Pro. In this complex, GlnRS functions to catalyze the ATP-dependent conversion of L-glutamine (Gln) and tRNA<sup>Gln</sup> to Gln-tRNA<sup>Gln</sup>. While GlnRS is used to synthesize Gln-tRNA<sup>Gln</sup> in many eukaryotic cells, prokaryotes and organelles, such as mitochondria and chloroplasts, can synthesize Gln-tRNA<sup>Gln</sup> in a two step process involving misacylation and amidation reactions.

## REFERENCES

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- Durkin, M.E., Jäger, A.C., Khurana, T.S., Nielsen, F.C., Albrechtsen, R. and Wewer, U.M. 1999. Characterization of the human Laminin  $\beta$ -2 chain locus (LAMB2): linkage to a gene containing a nonprocessed, transcribed LAMB2-like pseudogene (LAMB2L) and to the gene encoding glutamyl tRNA synthetase (QARS). *Cytogenet. Cell Genet.* 84: 173-178.
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- Kang, J., Kim, T., Ko, Y.G., Rho, S.B., Park, S.G., Kim, M.J., Kwon, H.J. and Kim, S. 2000. Heat shock protein 90 mediates protein-protein interactions between human aminoacyl-tRNA synthetases. *J. Biol. Chem.* 275: 31682-31688.

## CHROMOSOMAL LOCATION

Genetic locus: QARS (human) mapping to 3p21.31.

## SOURCE

GlnRS (X-12) is a mouse monoclonal antibody raised against recombinant GlnRS of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

GlnRS (X-12) is recommended for detection of GlnRS of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

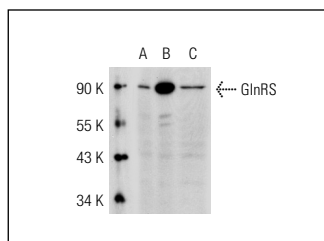
Suitable for use as control antibody for GlnRS siRNA (h): sc-75144; and as shRNA Plasmid control antibody for GlnRS shRNA Plasmid (h): sc-75144-SH.

Molecular Weight of GlnRS: 88 kDa.

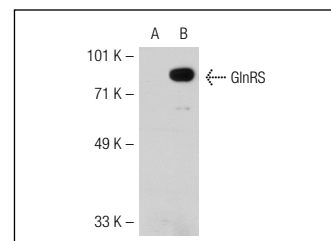
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

## DATA



GlnRS (X-12): sc-100988. Western blot analysis of GlnRS expression in non-transfected 293T: sc-117752 (A), human GlnRS transfected 293T: sc-113548 (B) and HeLa (C) whole cell lysates.



GlnRS (X-12): sc-100988. Western blot analysis of GlnRS expression in non-transfected 293T: sc-117752 (A) and human GlnRS transfected 293T: sc-113657 (B) whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.