

GlyRS (H-1): sc-271778

BACKGROUND

The fidelity of protein synthesis requires efficient discrimination of amino acid substrates by aminoacyl-tRNA synthetases. Proteins belonging to this family function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. GlyRS (Glycyl-tRNA synthetase), also known as Glycine-tRNA ligase, is a 739 amino acid class II synthetase that is widely expressed, including in the brain and spinal cord. Defects in the gene encoding GlyRS is the cause of Charcot-Marie-Tooth disease type 2D (CMT2D), which is an autosomal dominant inherited disease characterized by severe weakness, atrophy and absence of deep tendon reflexes in the upper extremities. Defects in the GlyRS gene is also the cause of distal hereditary muscular neuropathy type V (HMN5), a disease similar to CMT2D, though the distal sensory involvement is less severe in HMN5 patients.

REFERENCES

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- Antonellis, A., et al. 2003. Glycyl tRNA synthetase mutations in Charcot-Marie-Tooth disease type 2D and distal spinal muscular atrophy type V. *Am. J. Hum. Genet.* 72: 1293-1299.
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- Förster, C., et al. 2007. Crystallization and preliminary X-ray diffraction analysis of an *Escherichia coli* tRNA(Gly) acceptor-stem microhelix. *Acta Crystallogr. Sect. F, Struct. Biol. Cryst. Commun.* 63: 46-48.

CHROMOSOMAL LOCATION

Genetic locus: GARS (human) mapping to 7p14.3; Gars (mouse) mapping to 6 B3.

SOURCE

GlyRS (H-1) is a mouse monoclonal antibody raised against amino acids 440-732 mapping at the C-terminus of GlyRS of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GlyRS (H-1) is recommended for detection of GlyRS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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 GlyRS siRNA (h): sc-75153, GlyRS siRNA (m): sc-75154, GlyRS shRNA Plasmid (h): sc-75153-SH, GlyRS shRNA Plasmid (m): sc-75154-SH, GlyRS shRNA (h) Lentiviral Particles: sc-75153-V and GlyRS shRNA (m) Lentiviral Particles: sc-75154-V.

Molecular Weight of GlyRS: 75-80 kDa.

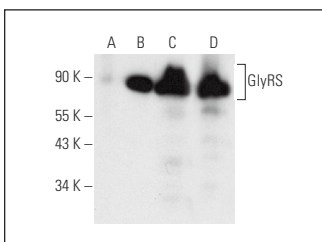
Positive Controls: GlyRS (m): 293T Lysate: sc-120534, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

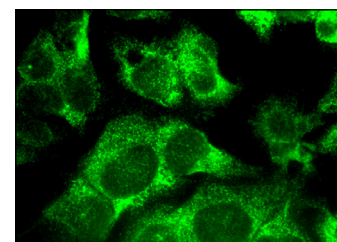
To ensure optimal results, the following support reagents are recommended:

- Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.
- Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GlyRS (H-1): sc-271778. Western blot analysis of GlyRS expression in non-transfected 293T: sc-117752 (A), mouse GlyRS transfected 293T: sc-120534 (B), HeLa (C) and Jurkat (D) whole cell lysates.



GlyRS (H-1): sc-271778. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

STORAGE

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