

# GlyRS (T-17): sc-69485

## 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

1. Shiba, K., et al. 1994. Human glycyl-tRNA synthetase. Wide divergence of primary structure from bacterial counterpart and species-specific aminoacylation. *J. Biol. Chem.* 269: 30049-30055.
2. Williams, J., et al. 1995. Cloning, sequencing and bacterial expression of human glycine tRNA synthetase. *Nucleic Acids Res.* 23: 1307-1310.
3. 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.
4. Antonellis, A., et al. 2006. Functional analyses of glycyl-tRNA synthetase mutations suggest a key role for tRNA-charging enzymes in peripheral axons. *J. Neurosci.* 26: 10397-10406.
5. James, P.A., et al. 2006. Severe childhood SMA and axonal CMT due to anticodon binding domain mutations in the GARS gene. *Neurology* 67: 1710-1712.
6. Seburn, K.L., et al. 2006. An active dominant mutation of glycyl-tRNA synthetase causes neuropathy in a Charcot-Marie-Tooth 2D mouse model. *Neuron* 51: 715-726.

## CHROMOSOMAL LOCATION

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

## SOURCE

GlyRS (T-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GlyRS of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-69485 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-69485 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GlyRS (T-17) is recommended for detection of GlyRS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

GlyRS (T-17) is also recommended for detection of GlyRS in additional species, including equine, canine, bovine, porcine and avian.

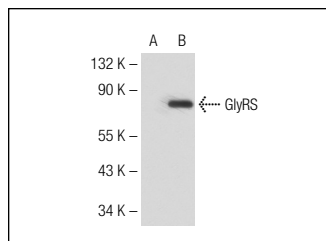
Suitable for use as control antibody for GlyRS siRNA (h): sc-75153, GlyRS siRNA (m): sc-75154, GlyRS shRNA Plasmid (h): sc-75153-SH, GlyRS shRNA Plasmid (m): sc-75154-SH, GlyRS shRNA (h) Lentiviral Particles: sc-75153-V and GlyRS shRNA (m) Lentiviral Particles: sc-75154-V.

GlyRS (T-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

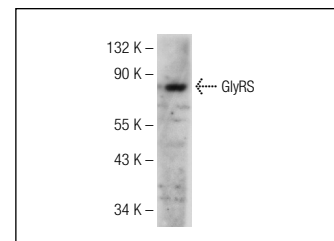
Molecular Weight of GlyRS: 75-80 kDa.

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

## DATA



GlyRS (T-17): sc-69485. Western blot analysis of GlyRS expression in non-transfected: sc-117752 (A) and mouse GlyRS transfected: sc-120534 (B) 293T whole cell lysates.



GlyRS (T-17): sc-69485. Western blot analysis of GlyRS expression in Jurkat whole cell lysate.

## 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.



Try **GlyRS (D-10): sc-365311** or **GlyRS (H-1): sc-271778**, our highly recommended monoclonal alternatives to GlyRS (T-17).