

GlyT1 (N-20): sc-16701

BACKGROUND

Na⁺/Cl⁻ dependent neurotransmitter transporters are a superfamily of transmembrane proteins that contain 12 membrane spanning regions. Specifically, the highly hydrophobic Na⁺/Cl⁻ dependent glycine transporters (GlyT) are crucial for the termination of neurotransmission at glycinergic synapses. Two different GlyT genes encode GlyT2 and GlyT1, which exists as two isoforms produced by alternative splicing of the same gene located on human chromosome 1p31.3. The GlyT1 gene may be an early marker of neural development and encodes glia-specific transporter proteins. Although GlyT1 and GlyT2 are both expressed in the brain and spinal cord, each shows a unique pattern of expression. GlyT1 is found only in the white matter of the CNS, whereas GlyT2 is found in the gray matter of the CNS as well as in macrophages and mast cells in peripheral tissues. The anatomic distribution of GlyT2 mRNA suggests that glycine may act as a supraspinal neurotransmitter and may function as a chemical messenger outside the CNS.

REFERENCES

1. Liu, Q.R., et al. 1992. Cloning and expression of a glycine transporter from mouse brain. *FEBS Lett.* 305: 110-114.
2. Borowsky, B., et al. 1993. Two glycine transporter variants with distinct localization in the CNS and peripheral tissues are encoded by a common gene. *Neuron* 10: 851-863.
3. Kim, K.M., et al. 1994. Cloning of the human glycine transporter type 1: molecular and pharmacological characterization of novel isoform variants and chromosomal localization of the gene in the human and mouse genomes. *Mol. Pharmacol.* 45: 608-617.
4. Adams, R.H., et al. 1995. Gene structure and glial expression of the glycine transporter GlyT1 in embryonic and adult rodents. *J. Neurosci.* 15: 2524-2532.
5. Evans, J., et al. 1999. Cloning, functional characterisation and population analysis of a variant form of the human glycine type 2 transporter. *FEBS Lett.* 463: 301-306.
6. Horiuchi, M., et al. 2001. Surface-localized glycine transporters 1 and 2 function as monomeric proteins in *Xenopus* oocytes. *Proc. Natl. Acad. Sci. USA* 98: 1448-1453.

CHROMOSOMAL LOCATION

Genetic locus: SLC6A9 (human) mapping to 1p34.1; Slc6a9 (mouse) mapping to 4 D2.1.

SOURCE

GlyT1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GlyT1 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.

Blocking peptide available for competition studies, sc-16701 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GlyT1 (N-20) is recommended for detection of GlyT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GlyT1 (N-20) is also recommended for detection of GlyT1 in additional species, including equine and canine.

Suitable for use as control antibody for GlyT1 siRNA (h): sc-41974, GlyT1 siRNA (m): sc-41975, GlyT1 shRNA Plasmid (h): sc-41974-SH, GlyT1 shRNA Plasmid (m): sc-41975-SH, GlyT1 shRNA (h) Lentiviral Particles: sc-41974-V and GlyT1 shRNA (m) Lentiviral Particles: sc-41975-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Burnet, P.W., et al. 2008. Expression of D-serine and glycine transporters in the prefrontal cortex and cerebellum in schizophrenia. *Schizophr. Res.* 102: 283-294.

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 or our catalog for detailed protocols and support products.