

# GlyR $\beta$ (H-170): sc-20134

## BACKGROUND

In the central nervous system (CNS), glycine-mediated inhibitory neurotransmission is essential to voluntary motor control and reflex responses. Glycine binds to glycine receptors (GlyR) in the postsynaptic neuronal membranes. GlyR,  $\gamma$ -aminobutyric acid, serotonin and acetylcholine comprise an evolutionally conserved superfamily of ligand-gated ion channels. The pentameric subunit structure of GlyR consists of two types of glycosylated membrane proteins,  $\alpha$ 1 through  $\alpha$ 4 and  $\beta$ , and an associated peripheral membrane protein, which combine to form a chloride-selective ion channel. In humans, the composition of the pentamer changes from  $\alpha$ 2 subunits in the fetal CNS to  $\alpha$ 1 and  $\beta$  subunits in the adult CNS. Fast potentiation of GlyR by intracellular  $Ca^{2+}$  in the brainstem and midbrain indicate an important role for  $Ca^{2+}$  in modulation of glycinergic synapses.

## REFERENCES

- Pfeiffer, F., et al. 1981. Solubilisation of the glycine receptor from rat spinal cord. *Brain Res.* 226: 273-279.
- Pfeiffer, F., et al. 1982. Purification by affinity chromatography of the glycine receptor of rat spinal cord. *J. Biol. Chem.* 257: 9389-9393.
- Genningloh, G., et al. 1987. The strychnine-binding subunit of the glycine receptor shows homology with nicotinic acetylcholine receptors. *Nature* 328: 215-220.
- Schofield, P.R., et al. 1987. Sequence and functional expression of the GABA<sub>A</sub> receptor shows a ligand-gated receptor super-family. *Nature* 328: 221-227.
- Langosch, D., et al. 1988. Conserved quarternary structure of ligand-gated ion channels: the postsynaptic glycine receptor is a pentamer. *Proc. Natl. Acad. Sci. USA* 85: 7394-7398.
- Hoch, W., et al. 1989. Primary cultures of mouse spinal cord express the neonatal isoform of the inhibitory glycine receptor. *Neuron* 3: 339-348.
- Grenningloh, G., et al. 1990. Alpha subunit variants of the human glycine receptor: primary structures, functional expression and chromosomal location of corresponding genes. *EMBO J.* 9: 771-776.

## CHROMOSOMAL LOCATION

Genetic locus: GLRB (human) mapping to 4q32.1; Glrb (mouse) mapping to 3 E3.

## SOURCE

GlyR  $\beta$  (H-170) is a rabbit polyclonal antibody raised against amino acids 328-497 of GlyR  $\beta$  of human origin.

## PRODUCT

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

## RESEARCH USE

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

## APPLICATIONS

GlyR  $\beta$  (H-170) is recommended for detection of GlyR  $\beta$  of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GlyR  $\beta$  (H-170) is also recommended for detection of GlyR  $\beta$  in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GlyR  $\beta$  siRNA (h): sc-42471, GlyR  $\beta$  siRNA (m): sc-42472, GlyR  $\beta$  shRNA Plasmid (h): sc-42471-SH, GlyR  $\beta$  shRNA Plasmid (m): sc-42472-SH, GlyR  $\beta$  shRNA (h) Lentiviral Particles: sc-42471-V and GlyR  $\beta$  shRNA (m) Lentiviral Particles: sc-42472-V.

Molecular Weight of GlyR  $\beta$ : 58 kDa.

Positive Controls: TT whole cell lysate: sc-364195.

## SELECT PRODUCT CITATIONS

- Oertel, J., et al. 2007. A novel glycine receptor  $\beta$  subunit splice variant predicts an unorthodox transmembrane topology. Assembly into heteromeric receptor complexes. *J. Biol. Chem.* 282: 2798-2807.
- Wang, H.D., et al. 2009. Glycine inhibits the LPS-induced increase in cytosolic  $Ca^{2+}$  concentration and TNF $\alpha$  production in cardiomyocytes by activating a glycine receptor. *Acta Pharmacol. Sin.* 30: 1107-1114.

## STORAGE

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

## PROTOCOLS

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



Try **GlyR  $\beta$  (D-8): sc-365819** or **GlyR  $\beta$  (G-1): sc-390156**, our highly recommended monoclonal alternatives to GlyR  $\beta$  (H-170).