

# GlyR $\alpha$ 1 (C-15): sc-17278

## 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 post synaptic 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. The genes encoding human GlyR  $\alpha$ 1,  $\alpha$ 2,  $\alpha$ 3 and  $\beta$  subunits map to chromosomes 5q33.1, Xp22, 4q33 and 4q31, respectively.

## 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 quaternary 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.
- Genningloh, 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: GLRA1 (human) mapping to 5q33.1.

## SOURCE

GlyR  $\alpha$ 1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GlyR  $\alpha$ 1 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.

Blocking peptide available for competition studies, sc-17278 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GlyR  $\alpha$ 1 (C-15) is recommended for detection of GlyR  $\alpha$ 1 of 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).

GlyR  $\alpha$ 1 (C-15) is also recommended for detection of GlyR  $\alpha$ 1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GlyR  $\alpha$ 1 siRNA (h): sc-42467, GlyR  $\alpha$ 1 shRNA Plasmid (h): sc-42467-SH and GlyR  $\alpha$ 1 shRNA (h) Lentiviral Particles: sc-42467-V.

Molecular Weight of GlyR  $\alpha$ 1: 48 kDa.

## 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

- Lee, S.C., et al. 2005. Expression of glycine receptor and transporter on bullfrog retinal Müller cells. *Neurosci. Lett.* 387: 75-79.
- Ge, L.H., et al. 2007. Glycine receptors are functionally expressed on bullfrog retinal cone photoreceptors. *Neuroscience* 146: 427-434.
- Kumar, P. and Meizel, S. 2008. Identification and spatial distribution of glycine receptor subunits in human sperm. *Reproduction* 136: 387-390.

## 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.


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Try **GlyR  $\alpha$ 1 (2E7): sc-293498**, our highly recommended monoclonal alternative to GlyR  $\alpha$ 1 (C-15).