

# GlyR $\alpha$ 3 (C-15): sc-17282

## 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, Xp22.2, 4q34.1 and 4q32.1, 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 superfamily. *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.

## CHROMOSOMAL LOCATION

Genetic locus: GLRA3 (human) mapping to 4q34.1; Glra3 (mouse) mapping to 8 B2.

## SOURCE

GlyR  $\alpha$ 3 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GlyR  $\alpha$ 3 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-17282 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

GlyR  $\alpha$ 3 (C-15) is recommended for detection of GlyR  $\alpha$ 3 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).

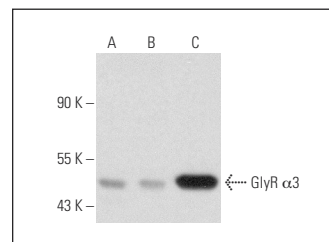
GlyR  $\alpha$ 3 (C-15) is also recommended for detection of GlyR  $\alpha$ 3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GlyR  $\alpha$ 3 siRNA (h): sc-42469, GlyR  $\alpha$ 3 siRNA (m): sc-42470, GlyR  $\alpha$ 3 shRNA Plasmid (h): sc-42469-SH, GlyR  $\alpha$ 3 shRNA Plasmid (m): sc-42470-SH, GlyR  $\alpha$ 3 shRNA (h) Lentiviral Particles: sc-42469-V and GlyR  $\alpha$ 3 shRNA (m) Lentiviral Particles: sc-42470-V.

Molecular Weight of GlyR  $\alpha$ 3: 48 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237, Hs 732.Sk/Mu whole cell lysate: sc-364362 or MCF7 whole cell lysate: sc-2206.

## DATA



GlyR  $\alpha$ 3 (C-15): sc-17282. Western blot analysis of GlyR  $\alpha$ 3 expression in SK-N-MC (A), Hs 732.Sk/Mu (B) and MCF7 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Heinze, L., et al. 2007. Diversity of glycine receptors in the mouse retina: localization of the  $\alpha$ 4 subunit. *J. Comp. Neurol.* 500: 693-707.
- Majumdar, S., et al. 2007. Glycine receptors of A-type ganglion cells of the mouse retina. *Vis. Neurosci.* 24: 471-487.
- Weiss, J., et al. 2008. Glycinergic input of small-field amacrine cells in the retinas of wildtype and glycine receptor deficient mice. *Mol. Cell. Neurosci.* 37: 40-55.
- Kumar, P. and Meizel, S. 2008. Identification and spatial distribution of glycine receptor subunits in human sperm. *Reproduction* 136: 387-390.
- García-Alcocer, G., et al. 2008. Developmental expression of glycine receptor subunits in rat cerebellum. *Int. J. Dev. Neurosci.* 26: 319-322.

## RESEARCH USE

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