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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# GlyR $\alpha$ 3 siRNA (h): sc-42469

## 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 evolutionarily 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 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

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## CHROMOSOMAL LOCATION

Genetic locus: GLRA3 (human) mapping to 4q34.1.

## PROTOCOLS

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

## PRODUCT

GlyR  $\alpha$ 3 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GlyR  $\alpha$ 3 shRNA Plasmid (h): sc-42469-SH and GlyR  $\alpha$ 3 shRNA (h) Lentiviral Particles: sc-42469-V as alternate gene silencing products.

For independent verification of GlyR  $\alpha$ 3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42469A, sc-42469B and sc-42469C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

GlyR  $\alpha$ 3 siRNA (h) is recommended for the inhibition of GlyR  $\alpha$ 3 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GlyR  $\alpha$ 3 gene expression knockdown using RT-PCR Primer: GlyR  $\alpha$ 3 (h)-PR: sc-42469-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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