SANTA CRUZ BIOTECHNOLOGY, INC.

$GABA_A$ Rγ1 siRNA (h): sc-42447

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GAD-65 and GAD-67, glutamate decarboxylases, function to catalyze the production of GABA (γ-aminobutyric acid). In the central nervous system, GABA functions as the main inhibitory transmitter by increasing a Cl^- (chloride) conductance that inhibits neuronal firing. GABA has been shown to activate both ionotropic ($GABA_A$) and metabotropic ($GABA_B$) receptors, as well as a third class of receptors called $GABA_C$. The γ subunit of $GABA_A$ receptors are important for benzodiazepine binding and modulation of GABA-mediated Cl^- current. $GABA_A$ Rγ1 (γ-aminobutyric acid $GABA_A$ receptor, γ 1), also known as GABRG1, is a 465 amino acid multi-pass membrane protein belonging to the ligand-gated ionic channel (TC 1.A.9) family. $GABA_A$ Rγ1 participates in neurotransmission inhibition and has been linked to alcohol dependence.

REFERENCES

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PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: GABRG1 (human) mapping to 4p12.

PRODUCT

$GABA_A$ Rγ1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see $GABA_A$ Rγ1 shRNA Plasmid (h): sc-42447-SH and $GABA_A$ Rγ1 shRNA (h) Lentiviral Particles: sc-42447-V as alternate gene silencing products.

For independent verification of $GABA_A$ Rγ1 (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-42447A, sc-42447B and sc-42447C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

$GABA_A$ Rγ1 siRNA (h) is recommended for the inhibition of $GABA_A$ Rγ1 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 µM in 66 µl. 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 $GABA_A$ Rγ1 gene expression knockdown using RT-PCR Primer: $GABA_A$ Rγ1 (h)-PR: sc-42447-PR (20 µl). 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.