SANTA CRUZ BIOTECHNOLOGY, INC.

$GABA_A$ Rθ siRNA (h): sc-105384

BACKGROUND

γ-aminobutyric acid type A ($GABA_A$) receptors mediate inhibitory neurotransmission in the mammalian central nervous system. The receptor exists as a pentameric ion channel composed by heteromeric combinations of α, β, γ, δ, ε, θ, or π subunits. Only specific subunit combinations produce viable receptors, while others never translocate to the cell surface from the ER where they are synthesized, and subsequently degraded. The θ subunit forms a receptor in combination with α3 subunits in monoaminergic cell groups. These receptors, found especially in the septum, preoptic areas, hypothalamic nuclei, amygdala and thalamus, likely have unique pharmacological properties linked to their expression in this particular cell type and not cholinergic cell groups, and may play a role in opiate withdrawl symptoms.

REFERENCES

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2. Heikkila, A.T., Echenko, O., Uusi-Oukari, M., Sinkkonen, S.T. and Korpi, E.R. 2001. Morphine withdrawal increases expression of $GABA_A$ receptor ε subunit mRNA in locus coeruleus neurons. Neuroreport 12: 2981-2985.
3. Moragues, N., Ciofi, P., Tramu, G. and Garret, M. 2002. Localisation of $GABA_A$ receptor ε-subunit in cholinergic and aminergic neurones and evidence for co-distribution with the θ-subunit in rat brain. Neuroscience 111: 657-669.
4. Bollan, K., Robertson, L.A., Tang, H. and Connolly, C.N. 2003. Multiple assembly signals in γ-aminobutyric acid (type A) receptor subunits combine to drive receptor construction and composition. Biochem. Soc. Trans. 31: 875-879.

CHROMOSOMAL LOCATION

Genetic locus: GABRQ (human) mapping to Xq28.

PRODUCT

$GABA_A$ Rθ 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 $GABA_A$ Rθ shRNA Plasmid (h): sc-105384-SH and $GABA_A$ Rθ shRNA (h) Lentiviral Particles: sc-105384-V as alternate gene silencing products.

For independent verification of $GABA_A$ Rθ (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-105384A, sc-105384B and sc-105384C.

PROTOCOLS

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

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

$GABA_A$ Rθ siRNA (h) is recommended for the inhibition of $GABA_A$ Rθ 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 $GABA_A$ Rθ gene expression knockdown using RT-PCR Primer: $GABA_A$ Rθ (h)-PR: sc-105384-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.