SANTA CRUZ BIOTECHNOLOGY, INC.

TRH-R1 siRNA (r): sc-270456

BACKGROUND

Thyrotrophin-releasing hormone (TRH) is a hypothalamic tripeptide that stimulates, via its receptor in the anterior pituitary gland, the release of thyrotrophin (TSH) and prolactin. The TRH receptors, TRH-R1 and TRH-R2, are G protein-coupled proteins containing seven transmembrane domains and other conserved regions. In rat, two isoforms exist, TRH-R (412) and TRH-R (387), that differ at their carboxy termini. TRH receptors are distributed throughout the central and peripheral nervous systems and are present in a variety of tissues. TRH-R2 displays 50% homology to TRH-R1 and is more restricted to the central nervous system than TRH-R1. Mutation in the TRH receptor gene is associated with isolated central hypothyroidism, a rare disorder characterized by insufficient TSH secretion resulting in low levels of thyroid hormones.

REFERENCES

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3. Zabavnik, J., et al. 1993. Distribution of thyrotrophin-releasing hormone receptor messenger RNA in rat pituitary and brain. Neuroscience 53: 877-887.
4. Duthie, S.M., et al. 1993. Cloning and functional characterisation of the human TRH receptor. Mol. Cell. Endocrinol. 95: R11-R15.
5. Cao, J., et al. 1998. Cloning and characterization of a cDNA encoding a novel subtype of rat thyrotropin-releasing hormone receptor. J. Biol. Chem. 273: 32281-32287.
6. Mitsuma, T., et al. 1999. Distribution of thyrotropin releasing hormone receptor type 2 in rats: an immunohistochemical study. Endocr. Regul. 33: 135-139.
7. Heuer, H., et al. 2000. Expression of thyrotropin-releasing hormone receptor 2 (TRH-R2) in the central nervous system of rats. J. Comp. Neurol. 428: 319-336.

CHROMOSOMAL LOCATION

Genetic locus: Trhr (rat) mapping to 7q31.

PRODUCT

TRH-R1 siRNA (r) 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 TRH-R1 shRNA Plasmid (r): sc-270456-SH and TRH-R1 shRNA (r) Lentiviral Particles: sc-270456-V as alternate gene silencing products.

For independent verification of TRH-R1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270456A, sc-270456B and sc-270456C.

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

TRH-R1 siRNA (r) is recommended for the inhibition of TRH-R1 expression in rat 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 TRH-R1 gene expression knockdown using RT-PCR Primer: TRH-R1 (r)-PR: sc-270456-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.

PROTOCOLS

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