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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) 

# TRH-R1 siRNA (m): sc-154637

## 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

1. Eidne, K.A., et al. 1991. Cloning, sequencing and tissue distribution of a candidate G protein-coupled receptor from rat pituitary gland. *FEBS Lett.* 292: 243-248.
2. de la Pena, P., et al. 1992. Two isoforms of the thyrotrophin-releasing hormone receptor generated by alternative splicing have indistinguishable functional properties. *J. Biol. Chem.* 267: 25703-25708.
3. Zavavnik, 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 thyrotrophin-releasing hormone receptor. *J. Biol. Chem.* 273: 32281-32287.

## CHROMOSOMAL LOCATION

Genetic locus: *Trhr* (mouse) mapping to 15 B3.2.

## PRODUCT

TRH-R1 siRNA (m) 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 TRH-R1 shRNA Plasmid (m): sc-154637-SH and TRH-R1 shRNA (m) Lentiviral Particles: sc-154637-V as alternate gene silencing products.

For independent verification of TRH-R1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154637A, sc-154637B and sc-154637C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ 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

TRH-R1 siRNA (m) is recommended for the inhibition of TRH-R1 expression in mouse 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 TRH-R1 gene expression knockdown using RT-PCR Primer: TRH-R1 (m)-PR: sc-154637-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.