SANTA CRUZ BIOTECHNOLOGY, INC.

TRH siRNA (h): sc-77977

BACKGROUND

TRH (thyrotrophin-releasing hormone), also known as TRF, Prothyroliberin or Thyroliberin, is a 242 amino acid secreted protein that belongs to the TRH family and is expressed in the hypothalamus in response to hypothyroidism. TRH is a hypothalamic tripeptide that stimulates the release of thyrotrophin (TSH) and prolactin through its receptor in the anterior pituitary gland. In addition to regulating the biosynthesis of TSH, TRH acts as a neurotransmitter and a neuromodulator in the central and peripheral nervous systems. An integral membrane ectopeptidase protein, PGP-II (pyroglutamyl peptidase II), cleaves and inactivates TRH in neural and hormonal transmissions. TRH may function as a melanoma autocrine growth factor in melanomas and dysplastic nevi.

REFERENCES

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3. Heuer, H., et al. 1999. Thyrotropin-releasing hormone (TRH), a signal peptide of the central nervous system. Acta Med. Austriaca 26: 119-122.
4. Prokai, L., et al. 1999. Metabolism-based brain-targeting system for a thyrotropin-releasing hormone analogue. J. Med. Chem. 42: 4563-4571.
5. Angel Vargas, M., et al. 2002. Thyrotropin-releasing hormone regulates the diurnal variation of pyroglutamyl aminopeptidase II activity in the male rat adenohypophysis. Eur. J. Endocrinol. 147: 363-369.
6. Vargas, M.A., et al. 2002. Thyrotropin-releasing hormone-induced down-regulation of pyroglutamyl aminopeptidase II activity involves L-type calcium channels and cam kinase activities in cultures of adenohypophyseal cells. J. Neuroendocrinol. 14: 184-193.
7. Prokai, L., et al. 2004. Centrally acting and metabolically stable thyrotropin-releasing hormone analogues by replacement of histidine with substituted pyridinium. J. Med. Chem. 47: 6025-6033.

CHROMOSOMAL LOCATION

Genetic locus: TRH (human) mapping to 3q22.1.

PRODUCT

TRH 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 TRH shRNA Plasmid (h): sc-77977-SH and TRH shRNA (h) Lentiviral Particles: sc-77977-V as alternate gene silencing products.

For independent verification of TRH (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-77977A, sc-77977B and sc-77977C.

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 siRNA (h) is recommended for the inhibition of TRH 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 TRH gene expression knockdown using RT-PCR Primer: TRH (h)-PR: sc-77977-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.