

# GHRH-R siRNA (m): sc-72354

## BACKGROUND

GHRH-R (growth hormone-releasing hormone receptor) is a seven transmembrane domain protein that localizes to the somatotroph of the pituitary. GHRH-R plays an important role in growth and acts as a high-affinity receptor for GHRH. Binding of GHRH leads to the coupling of GHRH-R to G protein which stimulates increased adenyl cyclase activity and the accumulation of cAMP leading to the synthesis and release of growth hormone and somatotroph proliferation. In addition, this signalling pathway may have direct action in fetal/placental development, reproduction and immune function. GHRH and GHRH-R may also play a role in the regulation of non-rapid eye movement sleep (NREMS). The expression of GHRH-R is dependent on the presence of the POU domain factor Pit-1. Mutations in the gene encoding this protein can result in isolated growth hormone deficiency (IGHD), also known as Dwarfism of Sindh, and anterior pituitary hypoplasia (APH).

## REFERENCES

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2. Salvatori, R., et al. 2002. Decreased expression of the GHRH receptor gene due to a mutation in a Pit-1 binding site. *Mol. Endocrinol.* 16: 450-458.
3. Ikushima, H., et al. 2003. Cutting edge: requirement for growth hormone-releasing hormone in the development of experimental autoimmune encephalomyelitis. *J. Immunol.* 171: 2769-2772.
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7. Alba, M., et al. 2004. Variability in anterior pituitary size within members of a family with GH deficiency due to a new splice mutation in the GHRH receptor gene. *Clin. Endocrinol.* 60: 470-475.
8. Wang, C.Y., et al. 2006. Expression profiles of growth hormone-releasing hormone and growth hormone-releasing hormone receptor during chicken embryonic pituitary development. *Poult. Sci.* 85: 569-576.
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## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## CHROMOSOMAL LOCATION

Genetic locus: *Ghrhr* (mouse) mapping to 6 B3.

## PRODUCT

GHRH-R 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 GHRH-R shRNA Plasmid (m): sc-72354-SH and GHRH-R shRNA (m) Lentiviral Particles: sc-72354-V as alternate gene silencing products.

For independent verification of GHRH-R (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-72354A, sc-72354B and sc-72354C.

## 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

GHRH-R siRNA (m) is recommended for the inhibition of GHRH-R 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 GHRH-R gene expression knockdown using RT-PCR Primer: GHRH-R (m)-PR: sc-72354-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.