

# GHS-R1 siRNA (h): sc-40017

## BACKGROUND

GHS-R1 (growth hormone secretagogue receptor type 1) is a G protein-coupled receptor. GHS-R1 binds synthetic peptidyl and nonpeptidyl growth hormone secretagogues (GHS), which stimulate growth hormone (GH) release. The binding of GHS to GHS-R1 is magnesium-dependent, inhibited by GTP- $\gamma$ -S and not displaced by the two hypothalamic hormones, growth hormone releasing hormone (GHRH) and somatostatin. This suggests that the interaction between GHS and GHS-R1 is distinct from GH regulation via GHRH and somatostatin and there exists a natural growth hormone regulator specific for GHS-R. GHS-R1 is primarily expressed in the hypothalamus and pituitary, and expression has been shown to be elevated in pituitary adenoma tissue.

## REFERENCES

1. Pong, S.S., et al. 1996. Identification of a new G protein-linked receptor for growth hormone secretagogues. *Mol. Endocrinol.* 10: 57-61.
2. Bennett, P.A., et al. 1997. Hypothalamic growth hormone secretagogue-receptor (GHS-R) expression is regulated by growth hormone in the rat. *Endocrinology* 138: 4552-4557.
3. Guan, X.M., et al. 1997. Distribution of mRNA encoding the growth hormone secretagogue receptor in brain and peripheral tissues. *Brain Res. Mol. Brain Res.* 48: 23-29.
4. Kamegai, J., et al. 1998. Growth hormone-dependent regulation of pituitary GF secretagogue receptor (GHS-R) mRNA levels in the spontaneous dwarf rat. *Neuroendocrinology* 68: 312-318.

## CHROMOSOMAL LOCATION

Genetic locus: GHSR (human) mapping to 3q26.31.

## PRODUCT

GHS-R1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GHS-R1 shRNA Plasmid (h): sc-40017-SH and GHS-R1 shRNA (h) Lentiviral Particles: sc-40017-V as alternate gene silencing products.

For independent verification of GHS-R1 (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-40017A, sc-40017B and sc-40017C.

## 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

GHS-R1 siRNA (h) is recommended for the inhibition of GHS-R1 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  $\mu$ 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.

## GENE EXPRESSION MONITORING

GHS-R1 (E-7): sc-374515 is recommended as a control antibody for monitoring of GHS-R1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GHS-R1 gene expression knockdown using RT-PCR Primer: GHS-R1 (h)-PR: sc-40017-PR (20  $\mu$ l, 437 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Chen, J.H., et al. 2011. Ghrelin induces cell migration through GHS-R, CaMKII, AMPK, and NF- $\kappa$ B signaling pathway in glioma cells. *J. Cell. Biochem.* 112: 2931-2941.
2. Zhu, J., et al. 2018. Ghrelin promotes human non-small cell lung cancer A549 cell proliferation through PI3K/Akt/mTOR/P70S6K and ERK signaling pathways. *Biochem. Biophys. Res. Commun.* 498: 616-620.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

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