

# Gucy2d siRNA (m): sc-145838

## BACKGROUND

Guanylate cyclases belong to the adenylyl cyclase class-4/guanylyl cyclase family. There are two forms of guanylate cyclase. The soluble form, known as GCS or sGC, act as a receptor for nitric oxide. The membrane-bound receptor form, known as GC, is a peptide hormone receptor. GCS is a cGMP-synthesizing enzyme, which is the major receptor for the neurotransmitter nitric oxide (NO). It plays a crucial role in smooth muscle contractility, platelet reactivity and neurotransmission. The intracellular stimulation of guanylate cyclase by calcium, a key event in the recovery of the dark state of rod photoreceptors after exposure to light, is mediated by guanylate cyclase-activating protein (GCAP1). GCAPs are calcium-binding proteins belonging to the calmodulin superfamily. Gucy2d (guanylate cyclase 2d) is a 118 amino acid protein that is encoded by a gene that maps to mouse chromosome 7 E2.

## REFERENCES

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2. Wedel, B., et al. 1995. Functional domains of soluble guanylyl cyclase. *J. Biol. Chem.* 270: 24871-24875.
3. Bellamy, T., et al. 2000. Rapid desensitization of the nitric oxide receptor, soluble guanylyl cyclase, underlies diversity of cellular cGMP responses. *Proc. Natl. Acad. Sci. USA* 97: 2928-2933.
4. Lee, Y., et al. 2000. Human recombinant soluble guanylyl cyclase: expression, purification and regulation. *Proc. Nat. Acad. Sci. USA* 97: 10763-10768.
5. Ibarra, C., et al. 2001. Regional and age-dependent expression of the nitric oxide receptor, soluble guanylyl cyclase, in the human brain. *Brain Res.* 907: 54-60.
6. Koblin, M., et al. 2001. Nitric oxide activates the  $\beta 2$  subunit of soluble guanylyl cyclase in the absence of a second subunit. *J. Biol. Chem.* 276: 30737-30743.
7. Martin, E., et al. 2001. YC-1 activation of human soluble guanylyl cyclase has both heme-dependent and heme independent components. *Proc. Nat. Acad. Sci. USA* 98: 12938-12942.
8. Gibb, B., et al. 2001. Subunits of nitric oxide receptor, soluble guanylyl cyclase, expressed in rat brain. *Eur. J. Neurosci.* 13: 539-544.

## CHROMOSOMAL LOCATION

Genetic locus: Gucy2d (mouse) mapping to 7 E2.

## PRODUCT

Gucy2d siRNA (m) is a target-specific 19-25 nt siRNA 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 Gucy2d shRNA Plasmid (m): sc-145838-SH and Gucy2d shRNA (m) Lentiviral Particles: sc-145838-V as alternate gene silencing 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

Gucy2d siRNA (m) is recommended for the inhibition of Gucy2d 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 Gucy2d gene expression knockdown using RT-PCR Primer: Gucy2d (m)-PR: sc-145838-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.

## PROTOCOLS

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