

# OGFOD2 siRNA (m): sc-150185

## BACKGROUND

OGFOD2 (2-oxoglutarate and iron-dependent oxygenase domain-containing protein 2) is a 350 amino acid protein that contains one PKHD (prolyl/lysyl hydroxylase) domain and is able to bind both ascorbate and iron as cofactors. It is suspected that members of the 2-oxoglutarate oxygenase protein family function to catalyze reactions that involve reactive oxidizing species, such as hydroxylations, desaturations and oxidative ring closures. There are four isoforms of OGFOD2 that are produced as a result of alternative splicing events. The gene encoding OGFOD2 maps to human chromosome 12, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p, which causes facial developmental defects and seizure disorders.

## REFERENCES

- Allen, T.L., et al. 1996. Cytogenetic and molecular analysis in trisomy 12p. *Am. J. Med. Genet.* 63: 250-256.
- Gilbert, F. and Kauff, N. 2000. Disease genes and chromosomes: disease maps of the human genome. *Chromosome 12. Genet. Test.* 4: 319-333.
- Montgomery, K.T., et al. 2001. A high-resolution map of human chromosome 12. *Nature* 409: 945-946.
- Turnbull, J.J., et al. 2004. Mechanistic studies on three 2-oxoglutarate-dependent oxygenases of flavonoid biosynthesis: anthocyanidin synthase, flavonol synthase, and flavanone 3 $\beta$ -hydroxylase. *J. Biol. Chem.* 279: 1206-1216.
- Wang, J. and Pantopoulos, K. 2005. The pathway for IRP2 degradation involving 2-oxoglutarate-dependent oxygenase(s) does not require the E3 ubiquitin ligase activity of pVHL. *Biochim. Biophys. Acta* 1743: 79-85.
- Welford, R.W., et al. 2005. Incorporation of oxygen into the succinate co-product of iron(II) and 2-oxoglutarate dependent oxygenases from bacteria, plants and humans. *FEBS Lett.* 579: 5170-5174.
- Hewitson, K.S., et al. 2005. Oxidation by 2-oxoglutarate oxygenases: non-haem iron systems in catalysis and signalling. *Philos. Transact. A Math. Phys. Eng. Sci.* 363: 807-28.

## CHROMOSOMAL LOCATION

Genetic locus: *Ogfod2* (mouse) mapping to 5 F.

## PRODUCT

OGFOD2 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 OGFOD2 shRNA Plasmid (m): sc-150185-SH and OGFOD2 shRNA (m) Lentiviral Particles: sc-150185-V as alternate gene silencing products.

For independent verification of OGFOD2 (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-150185A, sc-150185B and sc-150185C.

## 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

OGFOD2 siRNA (m) is recommended for the inhibition of OGFOD2 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 OGFOD2 gene expression knockdown using RT-PCR Primer: OGFOD2 (m)-PR: sc-150185-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.