



# FGF-21 siRNA (h): sc-39484

## BACKGROUND

Fibroblast growth factor-1 (FGF-1), also designated acidic FGF, and fibroblast growth factor-2 (FGF-2), also designated basic FGF, are members of a family of growth factors that stimulate proliferation of cells of mesenchymal, epithelial and neuroectodermal origin. Additional members of the FGF family include the oncogenes FGF-3 (Int2) and FGF-4 (hst/Kaposi), FGF-5, FGF-6, FGF-7 (KGF), FGF-8 (AIGF), FGF-9 (GAF) and FGF-10–FGF-23. Members of the FGF family share 30–55% amino acid sequence identity and similar gene structure, and are capable of transforming cultured cells when overexpressed in transfected cells. Cellular receptors for FGFs are members of a second multigene family including four tyrosine kinases, designated Flg (FGFR-1), Bek (FGFR-L), TKF and FGFR-3.

## REFERENCES

- Moore, R., et al. 1986. Sequence, topography and protein coding potential of mouse int-2: a putative oncogene activated by mouse mammary tumor virus. *EMBO J.* 5: 919–924.
- Delli Bovi, P., et al. 1987. An oncogene isolated by transfection of Kaposi's sarcoma DNA encodes a growth factor that is a member of the FGF family. *Cell* 50: 729–737.
- Zhan, X., et al. 1988. The human FGF-5 oncogene encodes a novel protein related to fibroblast growth factors. *Mol. Cell. Biol.* 8: 3487–3495.

## CHROMOSOMAL LOCATION

Genetic locus: FGF21 (human) mapping to 19q13.33.

## PRODUCT

FGF-21 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 FGF-21 shRNA Plasmid (h): sc-39484-SH and FGF-21 shRNA (h) Lentiviral Particles: sc-39484-V as alternate gene silencing products.

For independent verification of FGF-21 (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-39484A, sc-39484B and sc-39484C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  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

FGF-21 siRNA (h) is recommended for the inhibition of FGF-21 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

FGF-21 (Y-16): sc-81946 is recommended as a control antibody for monitoring of FGF-21 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 FGF-21 gene expression knockdown using RT-PCR Primer: FGF-21 (h)-PR: sc-39484-PR (20  $\mu$ l). Annealing temperature for the primers should be 55–60° C and the extension temperature should be 68–72° C.

## SELECT PRODUCT CITATIONS

- Wei, W., et al. 2018. Inhibition of Insulin resistance by PGE1 via autophagy-dependent FGF-21 pathway in diabetic nephropathy. *Sci. Rep.* 8: 9.
- Li, X., et al. 2019. FGF-21 mediates mesenchymal stem cell senescence via regulation of mitochondrial dynamics. *Oxid. Med. Cell. Longev.* 2019: 4915149.
- Jung, T.W., et al. 2019. Protectin DX ameliorates palmitate-induced hepatic Insulin resistance through AMPK/SIRT1-mediated modulation of fetuin-A and SeP expression. *Clin. Exp. Pharmacol. Physiol.* 46: 898–909.
- Sun, C., et al. 2024. Mitigation of gestational diabetes-induced endothelial dysfunction through FGF21-NRF2 pathway activation involving L-Cysteine. *Biochim. Biophys. Acta Mol. Basis Dis.* 1870: 167329.

## 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.