



# FGF-23 siRNA (m): sc-39487

## 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

1. Yamashita, T., et al. 2000. Identification of a novel fibroblast growth factor, FGF-23, preferentially expressed in the ventrolateral thalamic nucleus of the brain. *Biochem. Biophys. Res. Commun.* 277: 494–498.
2. White, K.E., et al. 2001. The autosomal dominant hypophosphatemic rickets (ADHR) gene is a secreted polypeptide overexpressed by tumors that cause phosphate wasting. *J. Clin. Endocrinol. Metab.* 86: 497–500.
3. Bowe, A.E., et al. 2001. FGF-23 inhibits renal tubular phosphate transport and is a PHEX substrate. *Biochem. Biophys. Res. Commun.* 284: 977–981.
4. Yamashita, T., et al. 2002. Fibroblast growth factor (FGF)-23 inhibits renal phosphate reabsorption by activation of the mitogen-activated protein kinase pathway. *J. Biol. Chem.* 277: 28265–28270.
5. Riminucci, M., et al. 2003. FGF-23 in fibrous dysplasia of bone and its relationship to renal phosphate wasting. *J. Clin. Invest.* 112: 683–692.
6. Gupta, A., et al. 2004. FGF-23 is elevated by chronic hyperphosphatemia. *J. Clin. Endocrinol. Metab.* 89: 4489–4492.
7. Shimada, T., et al. 2004. FGF-23 is a potent regulator of vitamin D metabolism and phosphate homeostasis. *J. Bone Miner. Res.* 19: 429–435.
8. Saito, H., et al. 2005. Circulating FGF-23 is regulated by 1 $\alpha$ ,25-dihydroxy vitamin D<sub>3</sub> and phosphorus *in vivo*. *J. Biol. Chem.* 280: 2543–2549.

## CHROMOSOMAL LOCATION

Genetic locus: *Fgf23* (mouse) mapping to 6 F3.

## PRODUCT

FGF-23 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 FGF-23 shRNA Plasmid (m): sc-39487-SH and FGF-23 shRNA (m) Lentiviral Particles: sc-39487-V as alternate gene silencing products.

For independent verification of FGF-23 (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-39487A, sc-39487B and sc-39487C.

## 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

FGF-23 siRNA (m) is recommended for the inhibition of FGF-23 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 FGF-23 gene expression knockdown using RT-PCR Primer: FGF-23 (m)-PR: sc-39487-PR (20  $\mu$ l, 467 bp). 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.