

# Flg siRNA (m): sc-29317

## BACKGROUND

Acidic and basic fibroblast growth factors (FGFs) are members of a family of multifunctional polypeptide growth factors that stimulate proliferation of cells of mesenchymal, epithelial and neuroectodermal origin. Like other growth factors, FGFs act by binding and activating specific cell surface receptors. These include the Flg receptor (FGFR-1), the Bek receptor (FGFR-2), FGFR-3, FGFR-4, FGFR-5 and FGFR-6. These receptors usually contain an extracellular ligand-binding region containing three immunoglobulin-like domains, a transmembrane domain and a cytoplasmic tyrosine kinase domain. The gene encoding human Flg maps to chromosome 8p11.23 and is alternatively spliced to produce several isoforms. Mutations in Flg are associated with Pfeiffer syndrome (a skeletal disorder characterized by craniosynostosis with deviation and enlargement of the thumbs and great toes), brachymesophalangy with phalangeal ankylosis and a varying degree of soft tissue syndactyly. The Flg gene is also involved in chromosomal translocations with ZNF198, CEP110 and FOP, which may lead to stem cell leukemia lymphoma (SCLL).

## CHROMOSOMAL LOCATION

Genetic locus: Fgfr1 (mouse) mapping to 8 A2.

## PRODUCT

Flg siRNA (m) is a pool of 4 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 Flg shRNA Plasmid (m): sc-29317-SH and Flg shRNA (m) Lentiviral Particles: sc-29317-V as alternate gene silencing products.

For independent verification of Flg (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-29317A, sc-29317B, sc-29317C and sc-29317D.

## 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

Flg siRNA (m) is recommended for the inhibition of Flg expression in mouse cells.

## PROTOCOLS

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

## 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

Flg (M2F12): sc-57132 is recommended as a control antibody for monitoring of Flg 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Flg gene expression knockdown using RT-PCR Primer: Flg (m)-PR: sc-29317-PR (20  $\mu$ l, 439 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Agas, D., et al. 2008. Anti-apoptotic Bcl-2 enhancing requires FGF-2/FGF receptor 1 binding in mouse osteoblasts. *J. Cell. Physiol.* 214: 145-152.
- Riuzzi, F., et al. 2011. S100B protein regulates myoblast proliferation and differentiation by activating FGFR1 in a  $\beta$ FGF-dependent manner. *J. Cell Sci.* 124: 2389-2400.
- Laflamme-Lahargue, F., et al. 2012. Blocking fibroblast growth factor receptor signaling inhibits tumor growth, lymphangiogenesis, and metastasis. *PLoS ONE* 7: e39540.
- Wu, S., et al. 2013. Increased expression of fibroblast growth factor 21 (FGF21) during chronic undernutrition causes growth hormone insensitivity in chondrocytes by inducing leptin receptor overlapping transcript (LEPROT) and leptin receptor overlapping transcript-like 1 (LEPROTL1) expression. *J. Biol. Chem.* 288: 27375-27383.
- Jiang, X.L., et al. 2014. MicroRNA-34a negatively regulates anesthesia-induced hippocampal apoptosis and memory impairment through FGFR1. *Int. J. Clin. Exp. Pathol.* 7: 6760-6767.
- Li, S., et al. 2021. The protective effects of fibroblast growth factor 10 against hepatic ischemia-reperfusion injury in mice. *Redox Biol.* 40: 101859.
- Moon, S., et al. 2022. Convergent biological pathways underlying the Kallmann syndrome-linked genes HS6ST1 and Fgfr1. *Hum. Mol. Genet.* E-published.

## RESEARCH USE

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