SANTA CRUZ BIOTECHNOLOGY, INC.

Flg siRNA (h): sc-29316

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).

REFERENCES

1. Moscatelli, D., et al. 1987. M_r 25,000 heparin-binding protein from guinea pig brain is a high molecular weight form of basic fibroblast growth factor. Proc. Natl. Acad. Sci. USA 84: 5778-5782.
2. Rifkin, D.B., et al. 1989. Recent developments in the cell biology of fibroblast growth factor. J. Cell Biol. 109: 1-6.

CHROMOSOMAL LOCATION

Genetic locus: FGFR1 (human) mapping to 8p11.23.

PRODUCT

Flg 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Flg shRNA Plasmid (h): sc-29316-SH and Flg shRNA (h) Lentiviral Particles: sc-29316-V as alternate gene silencing products.

For independent verification of Flg (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-29316A, sc-29316B and sc-29316C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Flg siRNA (h) is recommended for the inhibition of Flg 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 µM in 66 µl. 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 (h)-PR: sc-29316-PR (20 µl, 503 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, B.E., et al. 2013. IL-25 enhances HSV-1 replication by inhibiting filaggrin expression, and acts synergistically with Th2 cytokines to enhance HSV-1 replication. J. Invest. Dermatol. 133: 2678-2685.
2. Scioli, M.G., et al. 2014. High Insulin-induced down-regulation of Erk-1/IGF-1R/FGFR-1 signaling is required for oxidative stress-mediated apoptosis of adipose-derived stem cells. J. Cell. Physiol. 229: 2077-2087.
3. Lyon, C.A., et al. 2016. Soluble N-cadherin: a novel inhibitor of VSMC proliferation and intimal thickening. Vascul. Pharmacol. 78: 53-62.
4. Huang, Y., et al. 2017. C1q/TNF-related protein-3 exerts the chondroprotective effects in IL-1β-treated SW1353 cells by regulating the FGFR1 signaling. Biomed. Pharmacother. 85: 41-46.
5. Chen, G., et al. 2021. bFGF-mediated phosphorylation of δ-catenin increases its protein stability and the ability to induce the nuclear redistribution of β-catenin. Am. J. Cancer Res. 11: 3877-3892.
6. Yu, Y., et al. 2022. Suppression of *Cutibacterium acnes*-mediated inflammatory reactions by fibroblast growth factor 21 in skin. Int. J. Mol. Sci. 23: 3589.
7. Parthasarathy, G., et al. 2023. The FGF/FGFR system in the microglial neuroinflammation with *Borrelia burgdorferi:* likely intersectionality with other neurological conditions. J. Neuroinflammation 20: 10.

RESEARCH USE

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