

Flt-3/Flk-2 siRNA (h): sc-29320

BACKGROUND

Stem cell tyrosine kinase (STK-1) has been cloned from a CD34⁺ hematopoietic stem cell enriched library and identified as the human homolog of a previously identified gene of mouse origin designated either Flk-2 or Flt-3. The STK-1 cDNA encodes a protein of 993 amino acids with 85% identity to Flt-3/Flk-2. STK-1 is a member of the type III receptor tyrosine kinase family that includes Kit (steel factor receptor), Fms and PDGF. STK-1 expression in blood and marrow is restricted to CD34⁺ cells, a population greatly enriched for hematopoietic stem/progenitor cells. STK-1 antiserum recognizes two polypeptides in these cells. The mouse homolog of STK-1, designated Flt-3/Flk-2, is expressed at high levels in hematopoietic cells and also in neural, gonadal, hepatic and placental tissues. It has been suggested that STK-1 and its murine homolog Flt-3/Flk-2 may function as growth factor receptors on hematopoietic stem and/or progenitor cells.

REFERENCES

1. Matthews, W., et al. 1991. A receptor tyrosine kinase specific to hematopoietic stem and progenitor cell-enriched populations. *Cell* 65: 1143-1152.
2. Rosnet, O., et al. 1991. Murine Flt-3, a gene encoding a novel tyrosine kinase receptor of the PDGFR/CSF1R family. *Oncogene* 6: 1641-1650.
3. Rosnet, O., et al. 1991. Isolation and chromosomal localization of a novel Fms-like tyrosine kinase gene. *Genomics* 9: 380-385.
4. Lyman, S.D., et al. 1993. Characterization of the protein encoded by the Flt-3/Flk-2 receptor-like tyrosine kinase gene. *Oncogene* 8: 815-822.

CHROMOSOMAL LOCATION

Genetic locus: FLT3 (human) mapping to 13q12.2.

PRODUCT

Flt-3/Flk-2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Flt-3/Flk-2 shRNA Plasmid (h): sc-29320-SH and Flt-3/Flk-2 shRNA (h) Lentiviral Particles: sc-29320-V as alternate gene silencing products.

For independent verification of Flt-3/Flk-2 (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-29320A, sc-29320B and sc-29320C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Flt-3/Flk-2 siRNA (h) is recommended for the inhibition of Flt-3/Flk-2 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 μ M in 66 μ 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

Flt-3/Flk-2 (SF1.340): sc-19635 is recommended as a control antibody for monitoring of Flt-3/Flk-2 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 Flt-3/Flk-2 gene expression knockdown using RT-PCR Primer: Flt-3/Flk-2 (h)-PR: sc-29320-PR (20 μ l, 524 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, C.M., et al. 2011. Effect of small interfering RNA targeting wild-type FLT3 in acute myeloid leukaemia cells *in vitro* and *in vivo*. *J. Int. Med.* Res. 39: 1661-1674.
2. Zhao, X., et al. 2022. Epigenetic activation of the FLT3 gene by ZNF384 fusion confers a therapeutic susceptibility in acute lymphoblastic leukemia. *Nat. Commun.* 13: 5401.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.