SANTA CRUZ BIOTECHNOLOGY, INC.

c-Kit siRNA (h): sc-29225

BACKGROUND

The c-Kit proto-oncogene is a member of the receptor tyrosine kinase family and, more specifically, is closely related to the platelet derived growth factor receptor (PDGFR). c-Kit, the normal cellular homolog of the HZ4-feline sarcoma virus transforming gene (v-Kit), encodes a transmembrane receptor. c-Kit regulates a variety of biological responses including chemotaxis, cell proliferation, apoptosis and adhesion. c-Kit is also identical with the product of the W locus in mice and, as such, is integral to the development of mast cells and hematopoiesis. The ligand for the c-Kit receptor (KL) has been identified and is encoded at the murine steel (SI) locus. Kit is the human homolog of the proto-oncogene c-Kit. Mutations in Kit are integral for tumor growth and progression in various cancers.

CHROMOSOMAL LOCATION

Genetic locus: KIT (human) mapping to 4q12.

PRODUCT

c-Kit siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see c-Kit shRNA Plasmid (h): sc-29225-SH and c-Kit shRNA (h) Lentiviral Particles: sc-29225-V as alternate gene silencing products.

For independent verification of c-Kit (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-29225A, sc-29225B, sc-29225C and sc-29225D.

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

c-Kit siRNA (h) is recommended for the inhibition of c-Kit 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

c-Kit (E-3): sc-365504 is recommended as a control antibody for monitoring of c-Kit 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 c-Kit gene expression knockdown using RT-PCR Primer: c-Kit (h)-PR: sc-29225-PR (20 µl, 464 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, J., et al. 2007. Expression of c-Kit receptor tyrosine kinase and effect on β-cell development in the human fetal pancreas. Am. J. Physiol. Endocrinol. Metab. 293: E475-E483.
2. Wu, Y., et al. 2010. c-Kit and stem cell factor regulate PANC-1 cell differentiation into Insulin- and glucagon-producing cells. Lab. Invest. 90: 1373-1384.
3. Zhang, X., et al. 2014. Imatinib sensitizes endometrial cancer cells to cisplatin by targeting CD117-positive growth-competent cells. Cancer Lett. 345: 106-114.
4. Aguilar, C., et al. 2014. Co-stimulation with stem cell factor and erythropoietin enhances migration of c-Kit expressing cervical cancer cells through the sustained activation of ERK1/2. Mol. Med. Rep. 9: 1895-1902.
5. Huang, H., et al. 2015. Mir-152 inhibits cell proliferation and colony formation of $CD133^{+}$ liver cancer stem cells by targeting KIT. Tumour Biol. 36: 921-928.
6. Fang, C.H., et al. 2020. A novel c-Kit/phospho-prohibitin axis enhances ovarian cancer stemness and chemoresistance via Notch3-PBX1 and β-catenin-ABCG2 signaling. J. Biomed. Sci. 27: 42.
7. Sonnenschein, K., et al. 2021. Blood-based protein profiling identifies serum protein c-KIT as a novel biomarker for hypertrophic cardiomyopathy. Sci. Rep. 11: 1755.

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.