



c-Yes siRNA (h): sc-29860

BACKGROUND

Src is the human homolog of the v-Src gene of the Rous sarcoma virus, also known as avian sarcoma virus or ASV. Src is the first proto-oncogenic non-receptor tyrosine kinase characterized in human. By virtue of common structural motifs, the Src family is composed of nine members in vertebrates, including Src, Yes, Fgr, Frk, Fyn, Lyn, Hck, Lck and Blk. Src-family kinases transduce signals that control a variety of cellular processes, including proliferation, differentiation, motility and adhesion. Src-family kinases contain an amino-terminal cell membrane anchor followed by an SH3 domain and an SH2 domain involved in modular association and activation, respectively. Human c-Yes is the cellular homolog of the Yamaguchi sarcoma virus oncogene, Yes1. The human c-Yes gene maps to chromosome 18p11.32 and encodes a 543 amino acid protein. c-Src and c-Yes kinases are more than 80% homologous outside of unique amino-termini. Their respective SH3 and SH2 domains are capable of directing specificity in substrate binding.

REFERENCES

1. Sakaguchi, A.Y., et al. 1982. Organization of human proto-oncogenes. *Am. J. Hum. Genet.* 34: 175.
2. Semba, K., et al. 1985. Location of the c-Yes gene on the human chromosome and its expression in various tissues. *Science* 227: 1038-1040.
3. Williams, J.C., et al. 1998. Insights into Src kinase functions: structural comparisons. *Trends Biochem. Sci.* 23: 179-184.
4. Summy, J.M., et al. 2000. The SH3 and SH2 domains are capable of directing specificity in protein interactions between the non-receptor tyrosine kinases c-Src and c-Yes. *Oncogene* 19: 155-160.

CHROMOSOMAL LOCATION

Genetic locus: YES1 (human) mapping to 18p11.32.

PRODUCT

c-Yes 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 c-Yes shRNA Plasmid (h): sc-29860-SH and c-Yes shRNA (h) Lentiviral Particles: sc-29860-V as alternate gene silencing products.

For independent verification of c-Yes (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-29860A, sc-29860B and sc-29860C.

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

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

c-Yes (C-10): sc-46674 is recommended as a control antibody for monitoring of c-Yes 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 c-Yes gene expression knockdown using RT-PCR Primer: c-Yes (h)-PR: sc-29860-PR (20 μ l, 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. Liu, W., et al. 2012. LKB1/STK11 inactivation leads to expansion of a prometastatic tumor subpopulation in melanoma. *Cancer Cell* 21: 751-764.
2. Schaal, C.M., et al. 2018. Regulation of Sox-2 and stemness by nicotine and electronic-cigarettes in non-small cell lung cancer. *Mol. Cancer* 17: 149.
3. Venkata Subbaiah, K.C., et al. 2019. hnRNP L-mediated RNA switches function as a hypoxia-induced translational regulon. *Biochem. Biophys. Res. Commun.* 516: 753-759.
4. Zhao, D., et al. 2021. Scribble sub-cellular localization modulates recruitment of Yes1 to regulate Yap1 phosphorylation. *Cell Chem. Biol.* 28: 1235-1241.e5.
5. Barros, P., et al. 2023. YES1 Kinase mediates the membrane removal of rescued F508del-CFTR in airway cells by promoting MAPK pathway activation via SHC1. *Biomolecules* 13: 949.

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.