SANTA CRUZ BIOTECHNOLOGY, INC.

Fyn siRNA (m): sc-35425

BACKGROUND

Src is the human homolog of the v-Src gene of the Rous sarcoma virus, also called avian sarcoma virus or ASV. Src was 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 are involved in the control of 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. Src-family kinases are normally maintained in an inactive state and can be activated transiently during cellular events such as mitosis. Different subcellular localizations of Src-family kinases may be important for the regulation of specific cellular processes such as mitogenesis, cytoskeletal organization, and membrane trafficking. Fyn and Lck kinases play a key role in T-cell antigen receptor (TCR) signaling. The human Fyn gene maps to chromosome 6q21 and encodes a 537 amino acid protein.

REFERENCES

1. Sakaguchi, A.Y., et al. 1982. Organization of human proto-oncogenes. Am. J. Hum. Genet. 34: 175.
2. Hibbs, M.L., et al. 1997. Lyn, a Src-like tyrosine kinase. Int. J. Biochem. Cell Biol. 29: 397-400.

CHROMOSOMAL LOCATION

Genetic locus: Fyn (mouse) mapping to 10 B1.

PRODUCT

Fyn siRNA (m) 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 Fyn shRNA Plasmid (m): sc-35425-SH and Fyn shRNA (m) Lentiviral Particles: sc-35425-V as alternate gene silencing products.

For independent verification of Fyn (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-35425A, sc-35425B and sc-35425C.

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

Fyn siRNA (m) is recommended for the inhibition of Fyn expression in mouse 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

Fyn (15): sc-434 is recommended as a control antibody for monitoring of Fyn 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 Fyn gene expression knockdown using RT-PCR Primer: Fyn (m)-PR: sc-35425-PR (20 µl, 515 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhou, Y., et al. 2007. Laminin-induced activation of Rac1 and JNKp46 is initiated by Src family kinases and mimics the effects of skeletal muscle contraction. Biochemistry 46: 14907-14916.
2. McGinnis, L.K., et al. 2009. Functions of Fyn kinase in the completion of meiosis in mouse oocytes. Dev. Biol. 327: 280-287.
3. Pradines, E., et al. 2013. Pathogenic prions deviate PrP^{C} signaling in neuronal cells and impair A-β clearance. Cell Death Dis. 4: e456.
4. Li, X., et al. 2017. The tyrosine kinase Src promotes phosphorylation of the kinase TBK1 to facilitate type I interferon production after viral infection. Sci. Signal. 10: eaae0435.
5. Dou, X., et al. 2018. L1 coupling to ankyrin and the spectrin-Actin cytoskeleton modulates ethanol inhibition of L1 adhesion and ethanol teratogenesis. FASEB J. 32: 1364-1374.
6. Egervari, G., et al. 2020. Chromatin accessibility mapping of the striatum identifies tyrosine kinase FYN as a therapeutic target for heroin use disorder. Nat. Commun. 11: 4634.
7. Wang, Q., et al. 2022. Chrysin alleviates lipopolysaccharide-induced neuron damage and behavioral deficits in mice through inhibition of Fyn. Int. Immunopharmacol. 111: 109118.
8. Fukatsu, S., et al. 2023. Investigating the protective effects of a citrus flavonoid on the retardation morphogenesis of the oligodendroglia-like cell line by Rnd2 knockdown. Neurol. Int. 16: 33-61.

RESEARCH USE

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