SANTA CRUZ BIOTECHNOLOGY, INC.

RIPX siRNA (h): sc-89116

BACKGROUND

RIPX (Rap 2-interacting protein x), also known as RUFY3 (RUN and FYVE domain containing 3) or Singar1, is a 469 amino acid protein that contains one RUN (RPIP8, unc-14 and NESCA) domain and is highly expressed in brain tissue. Localized to both the cell projection and to the lamellipodia and filopodia of growth cones, RIPX is thought to play a role neuronal development, specifically by mediating the formation of single axons, a process that maintains optimal neuronal polarity. RIPX interacts with PI 3-kinase p110α and PI 3-kinase p85α and, via this interaction, may be able to inhibit the formation of additional axons during neuronal maturation. Two isoforms of RIPX (one of which is partially phosphorylated) exist due to alternative splicing events.

REFERENCES

1. Nagase, T., Ishikawa, K., Suyama, M., Kikuno, R., Hirosawa, M., Miyajima, N., Tanaka, A., Kotani, H., Nomura, N. and Ohara, O. 1998. Prediction of the coding sequences of unidentified human genes. XII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 355-364.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611194. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Yoshimura, T., Arimura, N. and Kaibuchi, K. 2006. Molecular mechanisms of axon specification and neuronal disorders. Ann. N.Y. Acad. Sci. 1086: 116-125.
4. Yoshimura, T., Arimura, N., Kawano, Y., Kawabata, S., Wang, S. and Kaibuchi, K. 2006. Ras regulates neuronal polarity via the PI3-kinase/Akt/GSK-3β/CRMP-2 pathway. Biochem. Biophys. Res. Commun. 340: 62-68.
5. Mori, T., Wada, T., Suzuki, T., Kubota, Y. and Inagaki, N. 2007. Singar1, a novel RUN domain-containing protein, suppresses formation of surplus axons for neuronal polarity. J. Biol. Chem. 282: 19884-19893.
6. Hammad, S.M., Twal, W.O., Barth, J.L., Smith, K.J., Saad, A.F., Virella, G., Argraves, W.S. and Lopes-Virella, M.F. 2009. Oxidized LDL immune complexes and oxidized LDL differentially affect the expression of genes involved with inflammation and survival in human U937 monocytic cells. Atherosclerosis 202: 394-404.

CHROMOSOMAL LOCATION

Genetic locus: RUFY3 (human) mapping to 4q13.3.

PRODUCT

RIPX 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 RIPX shRNA Plasmid (h): sc-89116-SH and RIPX shRNA (h) Lentiviral Particles: sc-89116-V as alternate gene silencing products.

For independent verification of RIPX (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-89116A, sc-89116B and sc-89116C.

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

RIPX siRNA (h) is recommended for the inhibition of RIPX 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RIPX gene expression knockdown using RT-PCR Primer: RIPX (h)-PR: sc-89116-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.