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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

STAU2 siRNA (m): sc-153882

BACKGROUND

STAU2 (staufen, RNA binding protein, homolog 2), also known as 39K2 or 39K3, is one of two vertebrate homologs of the *Drosophila* protein Staufen, an RNA-binding protein that mediates mRNA transport during *Drosophila* oogenesis and zygotic development. Expressed predominantly in brain tissue and throughout neuronal development, STAU2 belongs to the double-stranded RNA-binding protein family and is believed to shuttle between the nucleus and the cytoplasm, facilitating the microtubule-dependent delivery of neuronal RNA to dendrites of polarized neurons. In addition, STAU2 can be found in ribonucleoprotein particles (RNPs) that move along microtubules into dendrites. Interference of STAU2 expression in mature neurons leads to a significant reduction in dendritic spines. This suggests that STAU2 is essential for the proper formation and maintenance of dendritic spines. Due to alternative splicing events, STAU2 exists as five different isoforms.

REFERENCES

1. Duchaine, T.F., et al. 2002. Staufen2 isoforms localize to the somatodendritic domain of neurons and interact with different organelles. J. Cell Sci. 115: 3285-3295.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605920. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Macchi, P., et al. 2004. The brain-specific double-stranded RNA-binding protein Staufen2: nucleolar accumulation and isoform-specific exportin-5-dependent export. J. Biol. Chem. 279: 31440-31444.
4. Miki, T. and Yoneda, Y. 2004. Alternative splicing of Staufen2 creates the nuclear export signal for CRM1 (Exportin 1). J. Biol. Chem. 279: 47473-47479.
5. Monshausen, M., et al. 2004. The mammalian RNA-binding protein Staufen2 links nuclear and cytoplasmic RNA processing pathways in neurons. Neuromolecular Med. 6: 127-144.
6. Miki, T., et al. 2005. The role of mammalian Staufen on mRNA traffic: a view from its nucleocytoplasmic shuttling function. Cell Struct. Funct. 30: 51-56.

CHROMOSOMAL LOCATION

Genetic locus: Stau2 (mouse) mapping to 1 A3.

PRODUCT

STAU2 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 STAU2 shRNA Plasmid (m): sc-153882-SH and STAU2 shRNA (m) Lentiviral Particles: sc-153882-V as alternate gene silencing products.

For independent verification of STAU2 (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-153882A, sc-153882B and sc-153882C.

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

STAU2 siRNA (m) is recommended for the inhibition of STAU2 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

STAU2 (S-35): sc-101144 is recommended as a control antibody for monitoring of STAU2 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 STAU2 gene expression knockdown using RT-PCR Primer: STAU2 (m)-PR: sc-153882-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.