SANTA CRUZ BIOTECHNOLOGY, INC.

CABYR siRNA (h): sc-72773

BACKGROUND

Spermatozoa gain fertilization capacitation and hyperactivation after residing in the uterus or oviduct. Calcium, cAMP and protein tyrosine phosphorylation are necessary for the molecular mechanisms that allow for this transformation. CABYR (calcium-binding tyrosine phosphorylation-regulated protein), also known as Fibrousheathin-2 or cancer/testis antigen 88, is a 493 amino acid protein that is expressed in sperm flagella and exhibits increased tyrosine phosphorylation during capacitation. There are six named isoforms of CABYR that are produced as a result of alternative slicing events. Specifically, isoform 1 is expressed in the testis, while isoform 3 and isoform 5 are expressed in pancreas, brain and various brain tumors. Isoforms 1, 2 and 6 most likely bind calcium, whereas isoforms 3, 4 and 5 probably do not bind calcium.

REFERENCES

1. Naaby-Hansen, S., et al. 2002. CABYR, a novel calcium-binding tyrosine phosphorylation-regulated fibrous sheath protein involved in capacitation. Dev. Biol. 242: 236-254.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 612135. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Sen, B., et al. 2003. Splicing in murine CABYR and its genomic structure. Gene 310: 67-78.
4. Ficarro, S., et al. 2003. Phosphoproteome analysis of capacitated human sperm. Evidence of tyrosine phosphorylation of a kinase-anchoring protein 3 and valosin-containing protein/p97 during capacitation. J. Biol. Chem. 278: 11579-11589.
5. Hsu, H.C., et al. 2005. Characterization of two non-testis-specific CABYR variants that bind to GSK3β with a proline-rich extensin-like domain. Biochem. Biophys. Res. Commun. 329: 1108-1117.
6. Kim, Y.H., et al. 2005. Translation and assembly of CABYR coding region B in fibrous sheath and restriction of calcium binding to coding region A. Dev. Biol. 286: 46-56.

CHROMOSOMAL LOCATION

Genetic locus: CABYR (human) mapping to 18q11.2.

PRODUCT

CABYR 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 CABYR shRNA Plasmid (h): sc-72773-SH and CABYR shRNA (h) Lentiviral Particles: sc-72773-V as alternate gene silencing products.

For independent verification of CABYR (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-72773A, sc-72773B and sc-72773C.

RESEARCH USE

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

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

CABYR siRNA (h) is recommended for the inhibition of CABYR 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 CABYR gene expression knockdown using RT-PCR Primer: CABYR (h)-PR: sc-72773-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.