SANTA CRUZ BIOTECHNOLOGY, INC.

STK31 siRNA (h): sc-89897

BACKGROUND

Protein kinases catalyze the post-translational transfer of a phosphate group from ATP to a serine, threonine or tyrosine residue, thereby playing a major role in many intracellular and intercellular signaling cascades. STK31 (serine/threonine-protein kinase 31) is a 1,019 amino acid protein belonging to the protein kinase superfamily. STK31 contains one C-terminal protein kinase domain and one N-terminal Tudor domain, which functions as a protein-protein interaction motif during RNA metabolism or transport. As a testis-specific kinase, STK31 is found in both post-meitoic spermatocytes as well as in mature spermatozoa and is thought to be involved in spermatogensis and/or sperm function. Also, as a result of frequent expression in colorectal, gastric and esophageal cancers, STK31 has been identified as a potential cancer/testis (CT) antigen. There are two named isoforms of STK31 which are produced as a result of an alternative splicing event.

REFERENCES

1. Visconti, P.E. and Kopf, G.S. 1998. Regulation of protein phosphorylation during sperm capacitation. Biol. Reprod. 59: 1-6.
2. Visconti, P.E., Hao, Z., Purdon, M.A., Stein, P., Balsara, B.R., Testa, J.R., Herr, J.C., Moss, S.B. and Kopf, G.S. 2001. Cloning and chromosomal localization of a gene encoding a novel serine/threonine kinase belonging to the subfamily of testis-specific kinases. Genomics 77: 163-170.
3. Wang, P.J., McCarrey, J.R., Yang, F. and Page, D.C. 2001. An abundance of X-linked genes expressed in spermatogonia. Nat. Genet. 27: 422-426.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605790. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Spiridonov, N.A., Wong, L., Zerfas, P.M., Starost, M.F., Pack, S.D., Paweletz, C.P. and Johnson, G.R. 2005. Identification and characterization of SSTK, a serine/threonine protein kinase essential for male fertility. Mol. Cell. Biol. 25: 4250-4261.
6. Olesen, C., Nyeng, P., Kalisz, M., Jensen, T.H., Møller, M., Tommerup, N. and Byskov, A.G. 2007. Global gene expression analysis in fetal mouse ovaries with and without meiosis and comparison of selected genes with meiosis in the testis. Cell Tissue Res. 328: 207-221.
7. Yokoe, T., Tanaka, F., Mimori, K., Inoue, H., Ohmachi, T., Kusunoki, M. and Mori, M. 2008. Efficient identification of a novel cancer/testis antigen for immunotherapy using three-step microarray analysis. Cancer Res. 68: 1074-1082.
8. Sabeur, K., Ball, B.A., Corbin, C.J. and Conley, A. 2008. Characterization of a novel, testis-specific equine serine/threonine kinase. Mol. Reprod. Dev. 75: 867-873.

CHROMOSOMAL LOCATION

Genetic locus: STK31 (human) mapping to 7p15.3.

PROTOCOLS

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

PRODUCT

STK31 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 STK31 shRNA Plasmid (h): sc-89897-SH and STK31 shRNA (h) Lentiviral Particles: sc-89897-V as alternate gene silencing products.

For independent verification of STK31 (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-89897A, sc-89897B and sc-89897C.

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

STK31 siRNA (h) is recommended for the inhibition of STK31 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 STK31 gene expression knockdown using RT-PCR Primer: STK31 (h)-PR: sc-89897-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.