SANTA CRUZ BIOTECHNOLOGY, INC.

FKBP6 siRNA (h): sc-89491

BACKGROUND

FKBP6 (FK506-binding protein 6), also known as Rotamase, Immunophilin FKBP36 and Peptidyl-prolyl *cis-trans* isomerase FKBP6, is a 327 amino acid protein that, like other PPIases, accelerate the folding of proteins. As a component in synaptonemal complexes, FKBP6 is involved in homologous chromosomes pairing and male infertility in mice. There has been some suggestion that FKBP6 may play a role in modifying the susceptibility to idiopathic spermatogenic impairment in humans. Ubiquitously expressed in all tissues, FKBP6 is present at highest levels in testis, liver, kidney, skeletal muscle and heart. The gene encoding FKBP6 maps within a region of human chromosome 7 that has been implicated in Williams-Beuren syndrome, a rare developmental disorder involving abnormalities of the cardiovascular and musculoskeletal systems. Hemizygous deletion of FKBP6 may contribute to hypercalcemia and growth delay in Williams-Beuren syndrome.

REFERENCES

1. Meng, X., et al. 1998. A novel human gene FKBP6 is deleted in Williams syndrome. Genomics 52: 130-137.
2. Crackower, M.A., et al. 2003. Essential role of Fkbp6 in male fertility and homologous chromosome pairing in meiosis. Science 300: 1291-1295.
3. Metcalfe, K., et al. 2005. Autosomal dominant inheritance of Williams-Beuren syndrome in a father and son with haploinsufficiency for FKBP6. Clin. Dysmorphol. 14: 61-65.
4. Westerveld, G.H., et al. 2005. Mutations in the chromosome pairing gene FKBP6 are not a common cause of non-obstructive azoospermia. Mol. Hum. Reprod. 11: 673-675.
5. Miyamato, T., et al. 2006. Is a genetic defect in Fkbp6 a common cause of azoospermia in humans? Cell. Mol. Biol. Lett. 11: 557-569.
6. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 604839. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. van Hagen, J.M., et al. 2007. Comparing two diagnostic laboratory tests for Williams syndrome: fluorescent *in situ* hybridization versus multiplex ligation-dependent probe amplification. Genet. Test. 11: 321-327.

CHROMOSOMAL LOCATION

Genetic locus: FKBP6 (human) mapping to 7q11.23.

PRODUCT

FKBP6 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 FKBP6 shRNA Plasmid (h): sc-89491-SH and FKBP6 shRNA (h) Lentiviral Particles: sc-89491-V as alternate gene silencing products.

For independent verification of FKBP6 (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-89491A, sc-89491B and sc-89491C.

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

FKBP6 siRNA (h) is recommended for the inhibition of FKBP6 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.

GENE EXPRESSION MONITORING

FKBP6 (AT9B7): sc-517401 is recommended as a control antibody for monitoring of FKBP6 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 FKBP6 gene expression knockdown using RT-PCR Primer: FKBP6 (h)-PR: sc-89491-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.