

# FKBP10 siRNA (h): sc-75019

## BACKGROUND

The immunophilins are a highly conserved family of *cis-trans* peptidyl-prolyl isomerases that bind to and mediate the effects of immunosuppressive drugs, such as cyclosporin, FK506 and rapamycin. Immunophilins have also been implicated in protein folding and trafficking within the endoplasmic reticulum (ER). FKBP10 (FK506-binding protein 10), also known as peptidyl-prolyl *cis-trans* isomerase, PPlase, Rotamase, 65 kDa FK506-binding protein or FKBP65, is a 582 amino acid immunophilin localized to the ER lumen and found in many tissues including heart, spleen, brain, testis and lung. FKBP10 contains two EF-hand calcium-binding domains and four PPlase FKBP-type domains, suggesting an enzymatic role in protein folding by catalyzing the *cis-trans* isomerization of proline imidic peptide bonds in oligopeptides. FKBP10 also acts as a receptor for the immunosuppressants FK506 and rapamycin, which inhibit FKBP10 activity. FKBP10 is thought to interact with the Raf-1/HSP 90 heterocomplex during signal transduction processes, and may associate with elastin during elastin protein folding and transport. With a valine-24 addition to human FKBP10, human and mouse FKBP10 are almost identical.

## REFERENCES

1. Coss, M.C., et al. 1995. Molecular cloning, DNA sequence analysis, and biochemical characterization of a novel 65 kDa FK506-binding protein (FKBP65). *J. Biol. Chem.* 270: 29336-29341.
2. Coss, M.C., et al. 1998. The immunophilin FKBP65 forms an association with the serine/threonine kinase c-Raf-1. *Cell Growth Differ.* 9: 41-48.
3. Davis, E.C., et al. 1998. Identification of tropoelastin as a ligand for the 65 kDa FK506-binding protein, FKBP65, in the secretory pathway. *J. Cell Biol.* 140: 295-303.
4. Göthel, S.F., et al. 1999. Peptidyl-prolyl *cis-trans* isomerases, a superfamily of ubiquitous folding catalysts. *Cell. Mol. Life Sci.* 55: 423-436.
5. Patterson, C.E., et al. 2000. Developmental regulation of FKBP65. An ER-localized extracellular matrix binding-protein. *Mol. Biol. Cell* 11: 3925-3935.

## CHROMOSOMAL LOCATION

Genetic locus: FKBP10 (human) mapping to 17q21.2.

## PRODUCT

FKBP10 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FKBP10 shRNA Plasmid (h): sc-75019-SH and FKBP10 shRNA (h) Lentiviral Particles: sc-75019-V as alternate gene silencing products.

For independent verification of FKBP10 (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-75019A, sc-75019B and sc-75019C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

FKBP10 siRNA (h) is recommended for the inhibition of FKBP10 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  $\mu$ M in 66  $\mu$ l. 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

FKBP10 (D-4): sc-390538 is recommended as a control antibody for monitoring of FKBP10 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2021. FK506 binding protein 10: a key actor of collagen crosslinking in clear cell renal cell carcinoma. *Aging* 13: 19475-19485.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FKBP10 gene expression knockdown using RT-PCR Primer: FKBP10 (h)-PR: sc-75019-PR (20  $\mu$ l). 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.