

FKBP14 siRNA (h): sc-89458

BACKGROUND

FKBP14 (FK506-binding protein 14), also known as Peptidyl-prolyl *cis-trans* isomerase and 22 kDa FK506-binding protein, is a 211 amino acid enzyme that accelerates the folding of proteins during protein synthesis. Localized within the lumen of the endoplasmic reticulum, FKBP14 contains two EF-hand domains and one PPlase FKBP-type domain. Truncation of the amino-terminus of FKBP14 greatly reduces peptidyl prolyl *cis-trans* isomerase activity, therefore suggesting that the PPlase FKBP-type domain must be located at the N-terminus. The gene encoding FKBP14 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

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2. Zhang, Z. and Henzel, W.J. 2004. Signal peptide prediction based on analysis of experimentally verified cleavage sites. Protein Sci. 13: 2819-2824.
3. Suzuki, Y., et al. 2005. Stabilities and activities of the N- and C-domains of FKBP22 from a psychrotrophic bacterium overproduced in *Escherichia coli*. FEBS J. 272: 632-642.
4. Suzuki, Y., et al. 2005. Binding analysis of a psychrotrophic FKBP22 to a folding intermediate of protein using surface plasmon resonance. FEBS Lett. 579: 5781-5784.
5. Tremmel, D., et al. 2007. FKBP22 is part of chaperone/folding catalyst complexes in the endoplasmic reticulum of *Neurospora crassa*. FEBS Lett. 581: 2036-2040.
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CHROMOSOMAL LOCATION

Genetic locus: FKBP14 (human) mapping to 7p14.3.

PRODUCT

FKBP14 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FKBP14 shRNA Plasmid (h): sc-89458-SH and FKBP14 shRNA (h) Lentiviral Particles: sc-89458-V as alternate gene silencing products.

For independent verification of FKBP14 (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-89458A, sc-89458B and sc-89458C.

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

APPLICATIONS

FKBP14 siRNA (h) is recommended for the inhibition of FKBP14 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 μ M in 66 μ 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

FKBP14 (AT18E2): sc-517400 is recommended as a control antibody for monitoring of FKBP14 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 FKBP14 gene expression knockdown using RT-PCR Primer: FKBP14 (h)-PR: sc-89458-PR (20 μ 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.

PROTOCOLS

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