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# FKBP8 siRNA (h): sc-45637

## BACKGROUND

FKBP8 (FKBP38, FK506 binding protein 8) is an immunophilin family member lacking PPlase/arotamase activity that influences immunoregulation, protein folding and trafficking in neurons associated with memory function. The FKBP38 form derives from a truncated ORF. Presenilin 1 and 2 form molecular complexes with—and promote degradation of—FKBP38, and Bcl-2, and sequester these proteins in ER/Golgi, thereby inhibiting FKBP38-mediated,  $\gamma$ -secretase-independent, mitochondrial targeting of Bcl-2. FKBP8 present in the central nervous system can antagonize hedgehog (HH) signaling, where HH is critical for patterning and growth of many tissues in the developing embryo. Mouse FKBP38 mRNA is present in neurons and glial cells and appears more pronounced in neurons associated with the hippocampal formation in adult mouse brains.

## REFERENCES

1. Pedersen, K.M., et al. 1999.  $\mu$ FKBP38: a novel murine immunophilin homolog differentially expressed in Schwannoma cells and central nervous system neurons *in vivo*. *Electrophoresis* 20: 249-255.
2. Fong, S., et al. 2003. Functional identification of distinct sets of antitumor activities mediated by the FKBP gene family. *Proc. Natl. Acad. Sci. USA* 100: 14253-14258.
3. Nielsen, J.V., et al. 2004. FKBP8: novel isoforms, genomic organization and characterization of a forebrain promoter in transgenic mice. *Genomics* 83: 181-192.
4. Bulgakov, O.V., et al. 2004. FKBP8 is a negative regulator of mouse Sonic hedgehog signaling in neural tissues. *Development* 131: 2149-2159.
5. Massaad, C.A., et al. 2004. Inhibition of transcription factor activity by nuclear compartment-associated Bcl-2. *J. Biol. Chem.* 279: 54470-54478.

## CHROMOSOMAL LOCATION

Genetic locus: FKBP8 (human) mapping to 19p13.11.

## PRODUCT

FKBP8 siRNA (h) is a target-specific 19-25 nt siRNA 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 FKBP8 shRNA Plasmid (h): sc-45637-SH and FKBP8 shRNA (h) Lentiviral Particles: sc-45637-V as alternate gene silencing 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

FKBP8 siRNA (h) is recommended for the inhibition of FKBP8 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 60  $\mu$ 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

FKBP8 (C-10): sc-166607 is recommended as a control antibody for monitoring of FKBP8 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FKBP8 gene expression knockdown using RT-PCR Primer: FKBP8 (h)-PR: sc-45637-PR (20  $\mu$ l, 511 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Choi, M.S., et al. 2011. The essential role of FKBP38 in regulating phosphatase of regenerating liver 3 (PRL-3) protein stability. *Biochem. Biophys. Res. Commun.* 406: 305-309.
2. Hsu, F.F., et al. 2019. Signal peptide peptidase promotes tumor progression via facilitating FKBP8 degradation. *Oncogene* 38: 1688-1701.

## RESEARCH USE

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

## PROTOCOLS

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