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# FKBP8 shRNA (h) Lentiviral Particles: sc-45637-V

## 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. muFKBP38: 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.
6. Kang, C.B., et al. 2005. Molecular characterization of FK506 binding protein 38 and its potential regulatory role on the anti-apoptotic protein Bcl-2. *Biochem. Biophys. Res. Commun.* 337: 30-38.

## CHROMOSOMAL LOCATION

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

## PRODUCT

FKBP8 shRNA (h) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see FKBP8 siRNA (h): sc-45637 and FKBP8 shRNA Plasmid (h): sc-45637-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ\text{C}$ . Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ\text{C}$  for up to one week. Avoid repeated freeze thaw cycles.

## APPLICATIONS

FKBP8 shRNA (h) Lentiviral Particles is recommended for the inhibition of FKBP8 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

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