SANTA CRUZ BIOTECHNOLOGY, INC.

FKBP2 siRNA (h): sc-96608

BACKGROUND

FKBP2 (FK506-binding protein 2), also known as PPIase (Peptidyl-prolyl *cis-trans* isomerase) and FKBP13 (13 kDa FKBP), is a 142 amino acid enzyme that accelerates the folding of proteins. Specifically, FKBP2 catalyzes the *cis-trans* isomerization of imidic peptide bonds in oligopeptides. Localized to the endoplasmic reticular membrane, FKBP2 is predominantly expressed in thymus and T-cells. FKBP2 is an immunophilin, an intracellular receptor that is inhibited by immunosuppressant drugs such as FK506 and rapamycin. BIG1, a guanine nucleotide exchange factor, and the C-terminus of 4.1G, a protein that stabilizes spectrin-actin binding, interact with FKBP2. The gene encoding FKBP2 maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

REFERENCES

1. Jin, Y.J., et al. 1991. Molecular cloning of a membrane-associated human FK506- and rapamycin-binding protein, FKBP-13. Proc. Natl. Acad. Sci. USA 88: 6677-6681.
2. DiLella, A.G., et al. 1992. Chromosomal band assignments of the genes encoding human FKBP12 and FKBP13. Biochem. Biophys. Res. Commun. 189: 819-823.
3. Grimmond, S., et al. 1995. Exclusion of the 13-kDa rapamycin binding protein gene (FKBP2) as a candidate gene for multiple endocrine neoplasia type 1. Hum. Genet. 95: 455-458.
4. Courseaux, A., et al. 1996. Definition of the minimal MEN1 candidate area based on a 5-Mb integrated map of proximal 11q13. The European Consortium on Men1, (GENEM 1; Groupe d'Etude des Néoplasies Endocriniennes Multiples de type 1). Genomics 37: 354-365.
5. Lemmens, I., et al. 1997. Construction of a 1.2-Mb sequence-ready contig of chromosome 11q13 encompassing the multiple endocrine neoplasia type 1 (MEN1) gene. The European Consortium on MEN1. Genomics 44: 94-100.

CHROMOSOMAL LOCATION

Genetic locus: FKBP2 (human) mapping to 11q13.1.

PRODUCT

FKBP2 siRNA (h) is a pool of 2 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 FKBP2 shRNA Plasmid (h): sc-96608-SH and FKBP2 shRNA (h) Lentiviral Particles: sc-96608-V as alternate gene silencing products.

For independent verification of FKBP2 (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-96608A and sc-96608B.

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

FKBP2 siRNA (h) is recommended for the inhibition of FKBP2 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

FKBP2 (D-9): sc-390753 is recommended as a control antibody for monitoring of FKBP2 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 FKBP2 gene expression knockdown using RT-PCR Primer: FKBP2 (h)-PR: sc-96608-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.