SANTA CRUZ BIOTECHNOLOGY, INC.

TRBP2 siRNA (h): sc-106846

BACKGROUND

TRBP2, also known as TARBP2 *(trans*-activation-responsive (HIV-1) RNA binding protein 2), TRBP1 or TRBP, is a nuclear protein that contains three DRBM (double-stranded RNA-binding) domains. TRBP binds between the bulge and the loop of the HIV-1 TAR RNA regulatory element and activates HIV-1 gene expression in synergy with the viral Tat protein. The third DRBM motif in the C-terminus of human TRBP2 can interact with and inhibit PKR activity, thereby increasing HIV-1 long terminal repeat (LTR) expression. In addition, TRBP2 functions as a component of a Dicer-containing complex and associates with the catalytic subunit of the RNA-induced silencing complex (RISC), namely eIF2C2. TRBP2 is essential for Dicer stability and the proper assembly of RISC. This suggests that TRBP2, in association with Dicer, plays an important role in the processing of miRNAs (microRNAs).

REFERENCES

1. Gatignol, A., et al. 1991. Characterization of a human TAR RNA-binding protein that activates the HIV-1 LTR. Science 251: 1597-1600.
2. Kozak, C.A., et al. 1995. Genetic mapping in human and mouse of the locus encoding TRBP, a protein that binds the TAR region of the human immunodeficiency virus (HIV-1). Genomics 25: 66-72.
3. Gatignol, A., et al. 1996. Sequential steps in Tat *trans*-activation of HIV-1 mediated through cellular DNA, RNA, and protein binding factors. Gene Expr. 5: 217-228.
4. Braun, R.E. 2000. Temporal control of protein synthesis during spermatogenesis. Int. J. Androl. 23: 92-94.

CHROMOSOMAL LOCATION

Genetic locus: TARBP2 (human) mapping to 12q13.13.

PRODUCT

TRBP2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TRBP2 shRNA Plasmid (h): sc-106846-SH and TRBP2 shRNA (h) Lentiviral Particles: sc-106846-V as alternate gene silencing products.

For independent verification of TRBP2 (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-106846A, sc-106846B and sc-106846C.

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

TRBP2 siRNA (h) is recommended for the inhibition of TRBP2 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

TRBP2 (D-5): sc-514124 is recommended as a control antibody for monitoring of TRBP2 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 TRBP2 gene expression knockdown using RT-PCR Primer: TRBP2 (h)-PR: sc-106846-PR (20 µl, 594 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Caramuta, S., et al. 2013. Role of microRNAs and microRNA machinery in the pathogenesis of diffuse large B-cell lymphoma. Blood Cancer J. 3: e152.
2. Caramuta, S., et al. 2013. Clinical and functional impact of TARBP2 over-expression in adrenocortical carcinoma. Endocr. Relat. Cancer 20: 551-564.

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.