SANTA CRUZ BIOTECHNOLOGY, INC.

Tra-2β siRNA (m): sc-38567

BACKGROUND

Human transformer-2 α (Tra-2α) and Tra-2β are nuclear proteins that associate with distinct pre-mRNA splicing enhancer elements. Tra-2α is the functional homolog of the *Drosophila* TRA-2 protein, which regulates the female specific pre-mRNA splicing pattern of the doublesex (dsx) gene in *Drosophila*. Human Tra-2 proteins are able to actively splice *Drosophila* sex factors; however, human Tra-2α has not been shown to induce sexual differentiation suggesting that human Tra-2α may regulate splicing patterns involving alternative mechanisms. Tra-2α and Tra-2β contain a single RNP-type RNA-binding domain and selectively bind to purine-rich sequences to facilitate mRNA splicing. Expression of Tra-2β is upregulated during the reoxygenation of hypoxic astrocytes. Tra-2α and Tra-2β interact with the serine/arginine-rich (SR) family of splicing factors to form Tra-2/SR complexes that then regulate tissue-specific alternative splicing patterns of many pre-mRNAs.

REFERENCES

1. Amrein, H., et al. 1994. The role of specific protein-RNA and protein-protein interactions in positive and negative control of pre-mRNA splicing by transformer 2. Cell 76: 735-746.
2. Matsuo, N., et al. 1995. Cloning of a novel RNA binding polypeptide (RA301) induced by hypoxia/reoxygenation. J. Biol. Chem. 270: 28216-28222.
3. Dauwalder, B., et al. 1996. A human homologue of the *Drosophila* sex determination factor transformer-2 has conserved splicing regulatory functions. Proc. Natl. Acad. Sci. USA 93: 9004-9009.
4. Segade, F., et al. 1996. Molecular cloning of a mouse homologue for the *Drosophila* splicing regulator Tra-2. FEBS Lett. 387: 152-156.
5. Beil, B., et al. 1997. Molecular cloning of hTra2-β-1 and hTra2-β-2, two human homologs of Tra-2 generated by alternative splicing. DNA Cell Biol. 16: 679-690.
6. Tacke, R., et al. 1998. Human Tra-2 proteins are sequence-specific activators of pre-mRNA splicing. Cell 93: 139-148.

CHROMOSOMAL LOCATION

Genetic locus: Tra2b (mouse) mapping to 16 B1.

PRODUCT

Tra-2β siRNA (m) 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 Tra-2β shRNA Plasmid (m): sc-38567-SH and Tra-2β shRNA (m) Lentiviral Particles: sc-38567-V as alternate gene silencing products.

For independent verification of Tra-2β (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38567A, sc-38567B and sc-38567C.

RESEARCH USE

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

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

Tra-2β siRNA (m) is recommended for the inhibition of Tra-2β expression in mouse 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

Tra-2β (D-2): sc-166829 is recommended as a control antibody for monitoring of Tra-2β 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 Tra-2β gene expression knockdown using RT-PCR Primer: Tra-2β (m)-PR: sc-38567-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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