SANTA CRUZ BIOTECHNOLOGY, INC.

Tra-2β (D-4): sc-166769

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, which suggests that human Tra-2α proteins may regulate splicing patterns involving alternative mechanisms. Tra-2α and Tra-2β proteins 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, and both Tra-2α and Tra-2β are detected in nuclear fractions from Hela cells. 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.

CHROMOSOMAL LOCATION

Genetic locus: TRA2B (human) mapping to 3q27.2; Tra2b (mouse) mapping to 16 B1.

SOURCE

Tra-2β (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 10-50 near the N-terminus of Tra-2β of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166769 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-166769 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Tra-2β (D-4) is recommended for detection of Tra-2β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Tra-2β siRNA (h): sc-38566, Tra-2β siRNA (m): sc-38567, Tra-2β shRNA Plasmid (h): sc-38566-SH, Tra-2β shRNA Plasmid (m): sc-38567-SH, Tra-2β shRNA (h) Lentiviral Particles: sc-38566-V and Tra-2β shRNA (m) Lentiviral Particles: sc-38567-V.

Tra-2β (D-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of Tra-2β isoforms: 33/22/4 kDa.

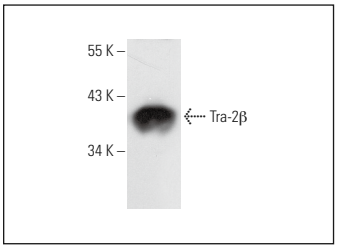
Molecular Weight (observed) of Tra-2β isoforms: 40 kDa.

Positive Controls: IMR-32 nuclear extract: sc-2148, HeLa nuclear extract: sc-2120 or SK-N-MC nuclear extract: sc-2154.

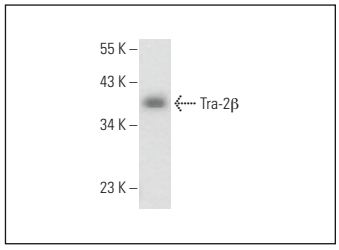
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Tra-2β (D-4): sc-166769. Western blot analysis of Tra-2β expression in IMR-32 nuclear extract.



Tra-2β (D-4): sc-166769. Western blot analysis of Tra-2β expression in IMR-32 nuclear extract.

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.