SANTA CRUZ BIOTECHNOLOGY, INC.

Tra-2β (D-2): sc-166829

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Human transformer-2α (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.

CHROMOSOMAL LOCATION

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

SOURCE

Tra-2β (D-2) 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_{2a} 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-166829 X, 200 µg/0.1 ml.

Tra-2β (D-2) is available conjugated to agarose (sc-166829 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166829 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166829 PE), fluorescein (sc-166829 FITC), Alexa Fluor® 488 (sc-166829 AF488), Alexa Fluor® 546 (sc-166829 AF546), Alexa Fluor® 594 (sc-166829 AF594) or Alexa Fluor® 647 (sc-166829 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166829 AF680) or Alexa Fluor® 790 (sc-166829 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166829 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-2) 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), immunohistochemistry (including paraffin-embedded sections) (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.

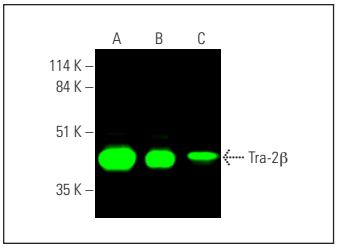
Tra-2β (D-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

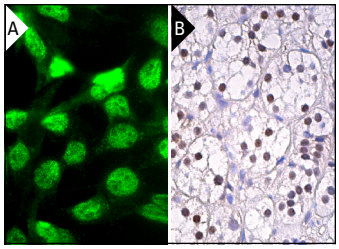
Molecular Weight (observed) of Tra-2β: 40 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, IMR-32 nuclear extract: sc-2148 or HL-60 nuclear extract: sc-2147.

DATA



Tra-2β (D-2): sc-166829. Near-infrared western blot analysis of Tra-2β expression in IMR-32 (**A**), K-562 (**B**) and HL-60 (**C**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



Tra-2β (D-2): sc-166829. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Paudel, D., et al. 2019. Expression of TRA2B in endometrial carcinoma and its regulatory roles in endometrial carcinoma cells. Oncol. Lett. 18: 2455-2463.
2. Zheng, X., et al. 2020. Hepatic proteomic analysis of selenoprotein F knockout mice by iTRAQ: an implication for the roles of selenoprotein F in metabolism and diseases. J. Proteomics 215: 103653.
3. Oh, J., et al. 2020. Opposite roles of Tra-2β and SRSF9 in the v10 exon splicing of CD44. Cancers 12: 3195.
4. Polo-Generelo, S., et al. 2024. Serpine1 mRNA confers mesenchymal characteristics to the cell and promotes $CD8^+$ T cells exclusion from colon adenocarcinomas. Cell Death Discov. 10: 116.

RESEARCH USE

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