

Tra-2 α (N-19): sc-8593

BACKGROUND

Human transformer-2 α (Tra-2 α) and transformer-2 β (Tra-2 β) are nuclear proteins that associate with distinct pre-mRNA splicing enhancer elements. Tra-2 α 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-2 α has not been shown to induce sexual differentiation, suggesting that human Tra-2 α proteins may regulate splicing patterns involving alternative mechanisms. Tra-2 α and Tra-2 β proteins contain a single RNP-type RNA-binding domain, and they selectively bind to purine-rich sequences to facilitate mRNA splicing. Expression of Tra-2 β is upregulated during the reoxygenation of hypoxic astrocytes, and both Tra-2 α and Tra-2 β are detected in nuclear fractions from HeLa cells. Tra-2 α and Tra-2 β 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

- Amrein, H., Hedley, M.L. and Maniatis, T. 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.
- Matsuo, N., Ogawa, S., Imai, Y., Takagi, T., Tohyama, M., Stern, D. and Wanaka, A. 1995. Cloning of a novel RNA binding polypeptide (RA301) induced by hypoxia/reoxygenation. *J. Biol. Chem.* 270: 28216-28222.
- Dauwalder, B., Amaya-Manzanares, F. and Mattox, W. 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.
- Segade, F., Hurler, B., Claudio, E., Ramos, S. and Lazo, P.S. 1996. Molecular cloning of a mouse homologue for the *Drosophila* splicing regulator Tra-2. *FEBS Lett.* 387: 152-156.
- Beil, B., Screaton, G. and Stamm, S. 1997. Molecular cloning of human transformer-2 β -1 and human transformer-2 β -2, two human homologs of Tra-2 generated by alternative splicing. *DNA Cell Biol.* 16: 679-690.
- Tacke, R., Tohyama, M., Ogawa, S. and Manley, J.L. 1998. Human Tra-2 proteins are sequence-specific activators of pre-mRNA splicing. *Cell* 93: 139-148.

CHROMOSOMAL LOCATION

Genetic locus: TRA2A (human) mapping to 7p15.3; Tra2a (mouse) mapping to 6 B2.3.

SOURCE

Tra-2 α (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Tra-2 α of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8593 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8593 X, 200 μ g/0.1 ml.

APPLICATIONS

Tra-2 α (N-19) is recommended for detection of Tra-2 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Tra-2 α (N-19) is also recommended for detection of Tra-2 α in additional species, including canine, bovine, porcine and avian.

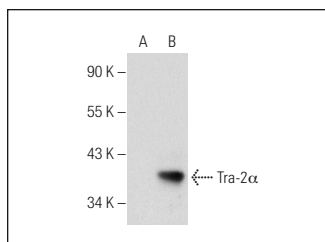
Suitable for use as control antibody for Tra-2 α siRNA (h): sc-38564, Tra-2 α siRNA (m): sc-38565, Tra-2 α shRNA Plasmid (h): sc-38564-SH, Tra-2 α shRNA Plasmid (m): sc-38565-SH, Tra-2 α shRNA (h) Lentiviral Particles: sc-38564-V and Tra-2 α shRNA (m) Lentiviral Particles: sc-38565-V.

Tra-2 α (C-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

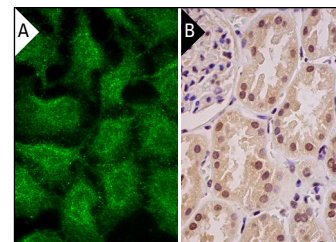
Molecular Weight of Tra-2 α : 40 kDa.

Positive Controls: Tra-2 α (m): 293T Lysate: sc-124240, HeLa nuclear extract: sc-2120 or Hep G2 nuclear extract: sc-364819.

DATA



Tra-2 α (N-19): sc-8593. Western blot analysis of Tra-2 α expression in non-transfected: sc-117752 (A) and mouse Tra-2 α transfected: sc-124240 (B) 293T whole cell lysates.



Tra-2 α (N-19): sc-8593. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (B).

RESEARCH USE

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

PROTOCOLS

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