SANTA CRUZ BIOTECHNOLOGY, INC.

TARBP1 (G-3): sc-514838

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The Power to Question

BACKGROUND

Probable methyltransferase TARBP1 (TAR (HIV-1) RNA binding protein 1), also known as TAR RNA-binding protein 1, TAR RNA-binding protein of 185 kDa (TRP-185) or TRM3, belongs to the RNA methyltransferase trmH family. TARBP1 binds to the loop region of TAR RNA in the event of HIV-1 infection, a region which is also bound by RNA polymerase II (Pol II). Research suggests that TARBP1 plays a role in disengaging Pol II from HIV-1 TAR RNA and may work in conjunction with HIV-1 Tat.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. Wu, F., et al. 1991. tat regulates binding of the human immunodeficiency virus *trans*-activating region RNA loop-binding protein TRP-185. Genes Dev. 5: 2128-2140.
2. Gatignol, A., et al. 1991. Characterization of a human TAR RNA-binding protein that activates the HIV-1 LTR. Science 251: 1597-1600.
3. Wu-Baer, F., et al. 1995. The cellular factor TRP-185 regulates RNA polymerase II binding to HIV-1 TAR RNA. EMBO J. 14: 5995-6009.
4. 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.
5. Wu-Baer, F., et al. 1995. Specific binding of RNA polymerase II to the human immunodeficiency virus *trans*-activating region RNA is regulated by cellular cofactors and Tat. Proc. Natl. Acad. Sci. USA 92: 7153-7157.
6. Wu-Baer, F., et al. 1996. Identification of a group of cellular cofactors that stimulate the binding of RNA polymerase II and TRP-185 to human immunodeficiency virus 1 TAR RNA. J. Biol. Chem. 271: 4201-4208.
7. Dorin, D., et al. 2003. The TAR RNA-binding protein, TRBP, stimulates the expression of TAR-containing RNAs *in vitro* and *in vivo* independently of its ability to inhibit the dsRNA-dependent kinase PKR. J. Biol. Chem. 278: 4440-4448.
8. Chendrimada, T.P., et al. 2005. TRBP recruits the Dicer complex to Ago2 for microRNA processing and gene silencing. Nature 436: 740-744.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: TARBP1 (human) mapping to 1q42.2.

SOURCE

TARBP1 (G-3) is a mouse monoclonal antibody raised against amino acids 1344-1563 mapping near the C-terminus of TARBP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TARBP1 (G-3) is available conjugated to agarose (sc-514838 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514838 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514838 PE), fluorescein (sc-514838 FITC), Alexa Fluor® 488 (sc-514838 AF488), Alexa Fluor® 546 (sc-514838 AF546), Alexa Fluor® 594 (sc-514838 AF594) or Alexa Fluor® 647 (sc-514838 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514838 AF680) or Alexa Fluor® 790 (sc-514838 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

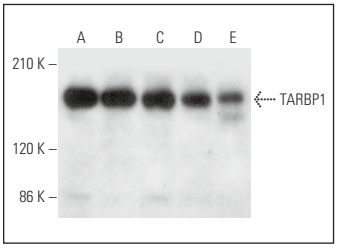
TARBP1 (G-3) is recommended for detection of TARBP1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TARBP1 siRNA (h): sc-88496, TARBP1 shRNA Plasmid (h): sc-88496-SH and TARBP1 shRNA (h) Lentiviral Particles: sc-88496-V.

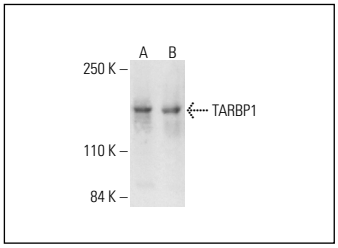
Molecular Weight of TARBP1: 185 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HEK293T whole cell lysate: sc-45137 or Jurkat whole cell lysate: sc-2204.

DATA



TARBP1 (G-3): sc-514838. Western blot analysis of TARBP1 expression in HeLa nuclear extract (**A**) and HEK293T (**B**), Jurkat (**C**), Hep G2 (**D**) and Caco-2 (**E**) whole cell lysates.



TARBP1 (G-3) HRP: sc-514838 HRP. Direct western blot analysis of TARBP1 expression in Jurkat (**A**) and HEK293T (**B**) whole cell lysates.

RESEARCH USE

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