SANTA CRUZ BIOTECHNOLOGY, INC.

TPN (F-6): sc-514852

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

TPN (tapasin, TPSN, TAPBP, transporter associated with antigen processing-A, TAP-A) is a type I membrane glycoprotein whose cDNA maps to chromosome 6p21.32 and encodes a 488 residue protein. Phosphorylation of TAP (transporter associated with antigen processing), a heterodimer consisting of TAP1 and TAP2, causes the assembly of high molecular weight complexes which contain TPN and facilitate the transfer of peptide antigens onto major histocompatibility complex (MHC) class I molecules. TPN mediates the association of newly assembled MHC class I molecules with TAP and controls antigen loading in the lumen of the endoplasmic reticulum. The cytoplasmic portion of TPN contains a double-lysine motif (-KKKAE-COOH) that is believed to mediate retention in the endoplasmic reticulum. TPN knockout mice show defects in the cell surface expression of MHC class I molecules, antigen presentation to $CD8^+$ T cells, and other humoral responses, suggesting that TPN is important for retention of empty MHC class I molecules in the ER.

REFERENCES

1. Li, S., et al. 1997. Cloning and functional characterization of a subunit of the transporter associated with antigen processing. Proc. Natl. Acad. Sci. USA 94: 8708-8713.
2. Ortmann, B., et al. 1997. A critical role for tapasin in the assembly and function of multimeric MHC class I-TAP complexes. Science 277: 1306-1309.
3. Li, S., et al. 1999. Peptide-bound major histocompatibility complex class I molecules associate with tapasin before dissociation from transporter associated with antigen processing. J. Biol. Chem. 274: 8649-8654.
4. Li, S., et al. 2000. Tapasin is required for efficient peptide binding to transporter associated with antigen processing. J. Biol. Chem. 275: 1581-1586.
5. Li, Y., et al. 2000. Regulation of transporter associated with antigen processing by phosphorylation. J. Biol. Chem. 275: 24130-24135.
6. Grandea, A.G., et al. 2000. Impaired assembly yet normal trafficking of MHC class I molecules in Tapasin mutant mice. Immunity 13: 213-222.

CHROMOSOMAL LOCATION

Genetic locus: TAPBP (human) mapping to 6p21.32.

SOURCE

TPN (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 55-77 within an internal region of TPN 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.

Blocking peptide available for competition studies, sc-514852 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

TPN (F-6) is recommended for detection of TPN 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 TPN siRNA (h): sc-42986, TPN shRNA Plasmid (h): sc-42986-SH and TPN shRNA (h) Lentiviral Particles: sc-42986-V.

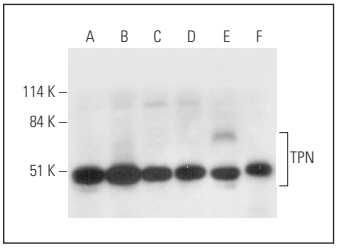
Molecular Weight of TPN: 48 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or Jurkat whole cell lysate: sc-2204.

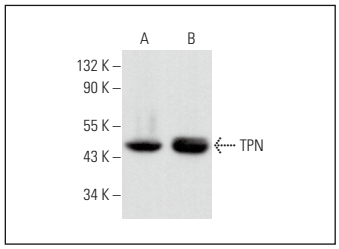
RECOMMENDED SUPPORT REAGENTS

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



TPN (F-6): sc-514852. Western blot analysis of TPN expression in HeLa (**A**), A-431 (**B**), Jurkat (**C**), HL-60 (**D**), Hep G2 (**E**) and OVCAR-3 (**F**) whole cell lysates.



TPN (F-6): sc-514852. Western blot analysis of TPN expression in HeLa (**A**) and Raji (**B**) whole cell lysates.

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.