SANTA CRUZ BIOTECHNOLOGY, INC.

TPN (E-11): sc-393552

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.

CHROMOSOMAL LOCATION

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

SOURCE

TPN (E-11) is a mouse monoclonal antibody raised against amino acids 304-345 mapping within an internal region of TPN 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.

TPN (E-11) is available conjugated to agarose (sc-393552 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393552 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393552 PE), fluorescein (sc-393552 FITC), Alexa Fluor® 488 (sc-393552 AF488), Alexa Fluor® 546 (sc-393552 AF546), Alexa Fluor® 594 (sc-393552 AF594) or Alexa Fluor® 647 (sc-393552 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393552 AF680) or Alexa Fluor® 790 (sc-393552 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

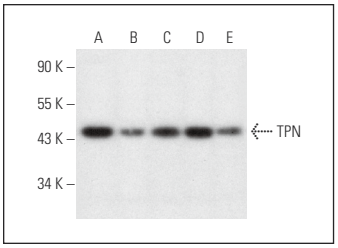
TPN (E-11) is recommended for detection of TPN of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (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 TPN siRNA (h): sc-42986, TPN shRNA Plasmid (h): sc-42986-SH and TPN shRNA (h) Lentiviral Particles: sc-42986-V.

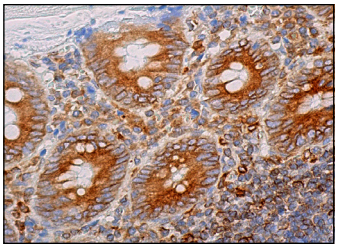
Molecular Weight of TPN: 48 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HL-60 whole cell lysate: sc-2209 or A-431 whole cell lysate: sc-2201.

DATA



TPN (E-11): sc-393552. Western blot analysis of TPN expression in Jurkat (**A**), HeLa (**B**), HL-60 (**C**), A-431 (**D**) and Hep G2 (**E**) whole cell lysates.



TPN (E-11): sc-393552. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic and membrane staining of glandular cells and lymphoid cells.

SELECT PRODUCT CITATIONS

1. Anczurowski, M., et al. 2019. Chaperones of the class I peptide-loading complex facilitate the constitutive presentation of endogenous antigens on HLA-$DP^{84GGPM87}$. J. Autoimmun. 102: 114-125.
2. Wang, X., et al. 2023. Species-deconvolved proteomics for *in situ* investigation of tumor-stroma interactions after treatment of pancreatic cancer patient-derived xenografts with combined gemcitabine and paclitaxel. J. Proteome Res. 22: 2436-2449.

STORAGE

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

PROTOCOLS

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