

TPN (E-11): sc-393552

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

- 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.
- 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.
- 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.
- 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 IgG₁ 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.

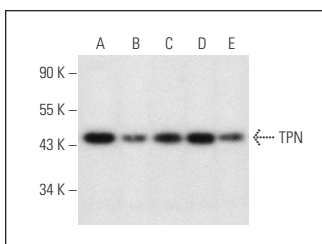
Molecular Weight of TPN: 48 kDa.

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

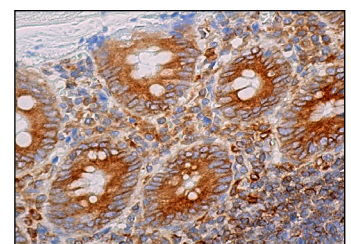
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

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

- 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.

STORAGE

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

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