

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.

CHROMOSOMAL LOCATION

Genetic locus: TAPBP (human) mapping to 6p21.32; Tapbp (mouse) mapping to 17 B1.

SOURCE

TPN (TO-3) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 49-62 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 (TO-3) is available conjugated to agarose (sc-80647 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-80647 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-80647 PE), fluorescein (sc-80647 FITC), Alexa Fluor[®] 488 (sc-80647 AF488), Alexa Fluor[®] 546 (sc-80647 AF546), Alexa Fluor[®] 594 (sc-80647 AF594) or Alexa Fluor[®] 647 (sc-80647 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-80647 AF680) or Alexa Fluor[®] 790 (sc-80647 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TPN (TO-3) is recommended for detection of TPN of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 flow cytometry (1 µg per 1 x 10⁶ cells).

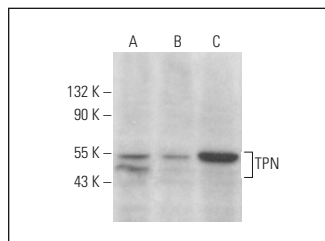
Suitable for use as control antibody for TPN siRNA (h): sc-42986, TPN siRNA (m): sc-42987, TPN shRNA Plasmid (h): sc-42986-SH, TPN shRNA Plasmid (m): sc-42987-SH, TPN shRNA (h) Lentiviral Particles: sc-42986-V and TPN shRNA (m) Lentiviral Particles: sc-42987-V.

Molecular Weight of TPN: 48 kDa.

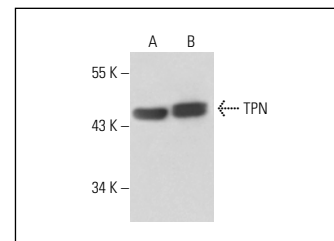
Positive Controls: HeLa whole cell lysate: sc-2200.

STORAGE

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

DATA

TPN (TO-3): sc-80647. Western blot analysis of TPN expression in BW5147 (A), RAW 264.7 (B) and MH-S (C) whole cell lysates.



TPN (TO-3): sc-80647. Western blot analysis of TPN expression in HeLa (A) and HL-60 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Han, W., et al. 2011. A novel approach to rescue immune escape in oral squamous cell carcinoma: combined use of interferon-γ and LY294002. *Oncol. Rep.* 25: 181-187.
- Wei, H., et al. 2011. IFN-γ enhances the anti-tumor immune response of dendritic cells against oral squamous cell carcinoma. *Arch. Oral Biol.* 56: 891-898.
- Shionoya, Y., et al. 2017. Loss of tapasin in human lung and colon cancer cells and escape from tumor-associated antigen-specific CTL recognition. *Oncoimmunology* 6: e1274476.
- Chason, K.D., et al. 2018. Age-associated changes in the respiratory epithelial response to influenza infection. *J. Gerontol. A Biol. Sci. Med. Sci.* 73: 1643-1650.
- Harvey, I.B., et al. 2019. Molluscum contagiosum virus MC80 sabotages MHC-I antigen presentation by targeting tapasin for ER-associated degradation. *PLoS Pathog.* 15: e1007711.
- Caiazza, C., et al. 2022. The lack of STING impairs the MHC-I dependent antigen presentation and JAK/STAT signaling in murine macrophages. *Int. J. Mol. Sci.* 23: 14232.

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.

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