

TPN (D-16): sc-14378

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 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.
- Grande, 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* (mouse) mapping to 17 B1.

SOURCE

TPN (D-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TPN of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14378 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

TPN (D-16) is recommended for detection of TPN of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

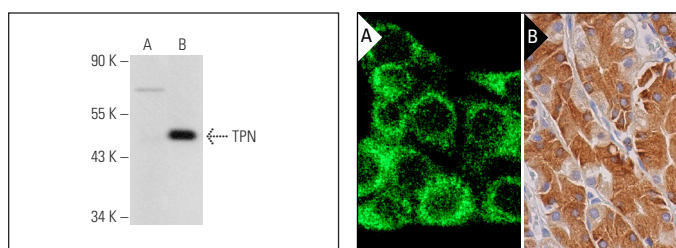
Molecular Weight of TPN: 48 kDa.

Positive Controls: TPN (m): 293T Lysate: sc-124233.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



TPN (D-16): sc-14378. Western blot analysis of TPN expression in non-transfected: sc-117750 (A) and mouse TPN transfected: sc-124233 (B) whole cell lysates.

TPN (D-16): sc-14378. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Lampton, P.W., et al. 2008. The role of tapasin in MHC class I protein trafficking in embryos and T cells. *J. Reprod. Immunol.* 78: 28-39.

RESEARCH USE

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