

TPN (E-16): sc-23020

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 class I (MHC1) molecules. TPN mediates the association of newly assembled MHC1 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 MHC1 molecules, antigen presentation to CD8⁺ T cells, and other humoral responses, suggesting that TPN is important for retention of empty MHC1 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.
- Li, Y., et al. 2000. Regulation of transporter associated with antigen processing by phosphorylation. J. Biol. Chem. 275: 24130-24135.
- Granda, 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; Tapbp (mouse) mapping to 17 B1.

SOURCE

TPN (E-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-23020 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TPN (E-16) is recommended for detection of TPN of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

TPN (E-16) is also recommended for detection of TPN in additional species, including porcine.

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.

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) 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.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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