

# TPPII (E-17): sc-15148

## BACKGROUND

Tripeptidyl peptidase II (TPPII), is a large intracellular serine exopeptidase with a subtilisin active site. TPPII protein is larger than the 26S proteasome and has a rod-shaped, dynamic supramolecular structure. TPPII is highly conserved among species and it sequentially removes tripeptides from the free amino-terminus of short peptides. TPPII has enhanced activity in proteasome inhibitor-adapted cells and degrades polypeptides by exo- as well as pre-dominantly trypsin-like endoproteolytic cleavage. TPPII participates in the apoptotic pathway triggered by *Shigella* and is also involved in apoptosis induced by ATP and the protein kinase inhibitor staurosporine. Overexpression of TPPII is sufficient to prevent accumulation of polyubiquitinated proteins and partially restores peptide loading of MHC molecules. TPPII is able to compromise proteasome activity and normalize the rate of intracellular protein breakdown, which is required for normal cellular function and viability.

## REFERENCES

- Tomkinson, B. and Zetterqvist, O. 1990. Immunological cross-reactivity between human tripeptidyl peptidase II and fibronectin. *Biochem J.* 267: 149-154.
- Tomkinson, B. and Jonsson, A.K. 1991. Characterization of cDNA for human tripeptidyl peptidase II: the N-terminal part of the enzyme is similar to subtilisin. *Biochemistry* 30: 168-174.
- Geier, E., Pfeifer, G., Wilm, M., Lucchiari-Hartz, M., Baumeister, W., Eichmann, K. and Niedermann, G. 1999. A giant protease with potential to substitute for some functions of the proteasome. *Science* 283: 978-981.
- Wang, E.W., Kessler, B.M., Borodovsky, A., Cravatt, B.F., Bogoy, M., Ploegh, H.L. and Glas, R. 2000. Integration of the ubiquitin-proteasome pathway with a cytosolic oligopeptidase activity. *Proc. Natl. Acad. Sci. USA* 97: 9990-9995.
- Hilbi, H., Puro, R.J. and Zychlinsky, A. 2000. Tripeptidyl peptidase II promotes maturation of caspase-1 in *Shigella flexneri*-induced macrophage apoptosis. *Infect. Immun.* 68: 5502-5508.

## CHROMOSOMAL LOCATION

Genetic locus: TPP2 (human) mapping to 13q33.1; Tpp2 (mouse) mapping to 1 C1.1.

## SOURCE

TPPII (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TPPII of human 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-15148 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

TPPII (E-17) is recommended for detection of TPPII 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

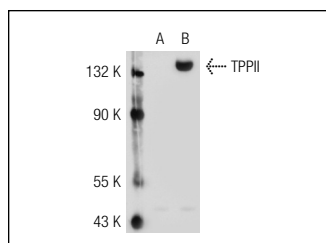
TPPII (E-17) is also recommended for detection of TPPII in additional species, including equine and bovine.

Suitable for use as control antibody for TPPII siRNA (h): sc-106629, TPPII siRNA (m): sc-154571, TPPII shRNA Plasmid (h): sc-106629-SH, TPPII shRNA Plasmid (m): sc-154571-SH, TPPII shRNA (h) Lentiviral Particles: sc-106629-V and TPPII shRNA (m) Lentiviral Particles: sc-154571-V.

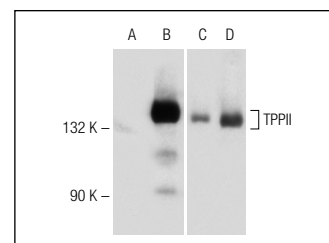
Molecular Weight of TPPII: 138 kDa.

Positive Controls: TPPII (h): 293T Lysate: sc-115504, HeLa whole cell lysate: sc-2200 or AML-193 whole cell lysate.

## DATA



TPPII (E-17): sc-15148. Western blot analysis of TPPII expression in non-transfected: sc-117752 (A) and human TPPII transfected: sc-115504 (B) 293T whole cell lysates.



TPPII (E-17): sc-15148. Western blot analysis of TPPII expression in non-transfected: sc-117752 293T (A), mouse TPPII transfected: sc-124235 293T (B), HeLa (C) and AML-193 (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Tye, C.E., Lorenz, R.L. and Bartlett, J.D. 2009. Lysosomal protease expression in mature enamel. *Cells Tissues Organs* 189: 111-114.
- Firat, E., Tsurumi, C., Gaedicke, S., Huai, J. and Niedermann, G. 2009. Tripeptidyl peptidase II plays a role in the radiation response of selected primary cell types but not based on nuclear translocation and p53 stabilization. *Cancer Res.* 69: 3325-3331.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.