

# Thimet oligopeptidase (D-10): sc-377153

## BACKGROUND

Thimet oligopeptidase, also designated soluble metallo-endoropeptidase, is a cytoplasmic protein belonging to the peptidase M3 family. The gene for the protein maps against chromosome 19q13.3. Thimet oligopeptidase can degrade the  $\beta$ -Amyloid precursor protein and generate amyloidogenic fragments. It is important in cytoplasmic peptide degradation and involved in metabolism of neuropeptides that are less than 20 amino acids in length. Thimet oligopeptidase is highly expressed in testis but can also be detected in liver, lung and kidney.

## REFERENCES

1. Pierotti, A., et al. 1990. Molecular cloning and primary structure of rat testes metalloendopeptidase EC 3.4.24.15. *Biochemistry* 29: 10323-10329.
2. McKie, N., et al. 1993. Thimet oligopeptidase: similarity to "soluble Angiotensin II-binding protein" and some corrections to the published amino acid sequence of the rat testis enzyme. *Biochem. J.* 295: 57-60.
3. McCool, S., et al. 2000. Expression of the Thimet oligopeptidase gene is regulated by positively and negatively acting elements. *DNA Cell Biol.* 19: 729-738.
4. Edbauer, D., et al. 2002. Insulin-degrading enzyme rapidly removes the  $\beta$ -Amyloid precursor protein intracellular domain (AICD). *J. Biol. Chem.* 277: 13389-13393.
5. Oliveira, V., et al. 2002. Temperature and salts effects on the peptidase activities of the recombinant metallooligopeptidases neurolysin and Thimet oligopeptidase. *Eur. J. Biochem.* 269: 4326-4334.
6. York, I.A., et al. 2003. The cytosolic endopeptidase, Thimet oligopeptidase, destroys antigenic peptides and limits the extent of MHC class I antigen presentation. *Immunity* 18: 429-440.
7. Ray, K., et al. 2004. Crystal structure of human Thimet oligopeptidase provides insight into substrate recognition, regulation, and localization. *J. Biol. Chem.* 279: 20480-20489.
8. Saric, T., et al. 2004. Pathway for degradation of peptides generated by proteasomes: a key role for Thimet oligopeptidase and other metallopeptidases. *J. Biol. Chem.* 279: 46723-46732.
9. Sigman, J.A., et al. 2005. Flexibility in substrate recognition by Thimet oligopeptidase as revealed by denaturation studies. *Biochem. J.* 388: 255-261.

## CHROMOSOMAL LOCATION

Genetic locus: THOP1 (human) mapping to 19p13.3.

## SOURCE

Thimet oligopeptidase (D-10) is a mouse monoclonal antibody raised against amino acids 306-357 mapping within an internal region of Thimet oligopeptidase of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Thimet oligopeptidase (D-10) is recommended for detection of Thimet oligopeptidase of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Suitable for use as control antibody for Thimet oligopeptidase siRNA (h): sc-72152, Thimet oligopeptidase shRNA Plasmid (h): sc-72152-SH and Thimet oligopeptidase shRNA (h) Lentiviral Particles: sc-72152-V.

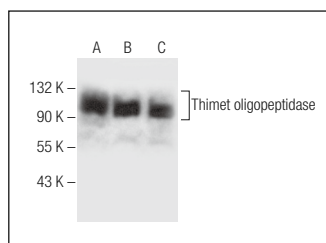
Molecular Weight of Thimet oligopeptidase: 74 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, TE671 cell lysate: sc-2416 or K-562 whole cell lysate: sc-2203.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Thimet oligopeptidase (D-10): sc-sc-377153. Western blot analysis of Thimet oligopeptidase expression in HeLa (A), K-562 (B) and TE671 (C) whole cell lysates.

## 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) for detailed protocols and support products.