Data Sheet (Cat.No.TMPY-02767)

TargetMol

TPP1 Protein, Human, Recombinant (His)

General Information

Synonyms:	tripeptidyl peptidase I;CLN2;TPP-1;SCAR7;GIG1;LPIC
Protein Construction:	A DNA sequence encoding the pro form of human TPP1 (AAH14863.1) (Met 1-Pro 563) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 20
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	AAH14863.1
Molecular Weight:	60.7 kDa (predicted); 60 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by the cleavage of AlaAlaPheAMC. The specific activity is > 850 pmoles/min/μg.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 500 mM NaCl, pH 7.4, 10% gly.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Tripeptidyl-peptidase 1 (TPP1 / CLN2) is a member of the sedolisin family of serine proteases. The protease functions in the lysosome to cleave N-terminal tripeptides from substrates, and has weaker endopeptidase activity. It is synthesized as a catalytically-inactive enzyme which is activated and auto-proteolyzed upon acidification. TPP1 / CLN2 may act as a non-specific lysosomal peptidase which generates tripeptides from the breakdown products produced by lysosomal proteinases. Defects in TPP1 / CLN2 are the cause of neuronal ceroid lipofuscinosis type 2 (CLN2), a form of neuronal ceroid lipofuscinosis which is associated with the failure to degrade specific neuropeptides and a subunit of ATP synthase in the lysosome. Neuronal ceroid lipofuscinoses are progressive neurodegenerative, lysosomal storage diseases characterized by intracellular accumulation of autofluorescent liposomal material, and clinically by seizures, dementia, visual loss, and/or cerebral atrophy.

Reference

Xin H,et al.(2007) TPP1 is a homologue of ciliate TEBP-beta and interacts with POT1 to recruit telomerase. Nature. 445(7127): 559-62.

O'Connor MS,et al.(2006) A critical role for TPP1 and TIN2 interaction in high-order telomeric complex assembly. Proc Natl Acad Sci U S A. 103(32): 11874-9.

Abreu E,et al.(2010) TIN2-tethered TPP1 recruits human telomerase to telomeres in vivo. Mol Cell Biol. 30(12): 2971-82.

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