

# PRODUCT INFORMATION



## PPT1 (human, recombinant)

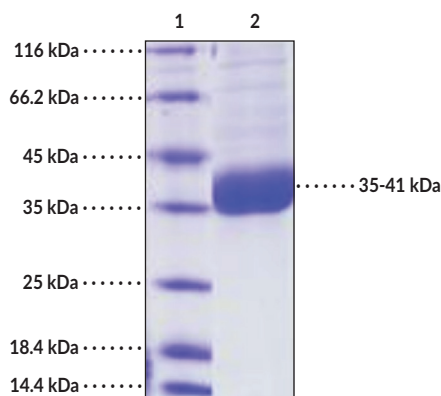
Item No. 38066

### Overview and Properties

**Synonyms:** Palmitoyl-protein Hydrolase 1, Palmitoyl-protein Thioesterase 1, CLN1  
**Source:** Recombinant human C-terminal His-tagged PPT1 expressed in HEK293 cells  
**Amino Acids:** 28-306  
**Uniprot No.:** P50897-1  
**Molecular Weight:** 32.7 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥1 year  
**Purity:** ≥90% estimated by SDS-PAGE  
**Supplied in:** Lyophilized from sterile PBS, pH 7.4  
**Endotoxin Testing:** <1.0 EU/μg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2: PPT1

**SDS-PAGE Analysis of PPT1.** This protein has a calculated molecular weight of 32.7 kDa. It has an apparent molecular weight of approximately 35-41 kDa by SDS-PAGE due to glycosylation.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

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Palmitoyl-protein thioesterase 1 (PPT1) is a lysosomal hydrolase involved in removing palmitic acid (Item No. 10006627) from post-translationally modified proteins prior to their degradation.<sup>1</sup> It is mainly expressed in the brain but is also found in visceral macrophages from liver, lung, and bowel tissues.<sup>2</sup> PPT1 depalmitoylates proteins in cells undergoing autophagy, and PPT1 activity is important for axon outgrowth, neurite extension, and dendritic spine morphology.<sup>1</sup> Knockout of *PPT1* decreases tumor growth in a mouse xenograft model, and high expression of *PPT1* is associated with poor overall survival in several cancers.<sup>3</sup> Mutations in *PPT1* cause infantile neuronal ceroid lipofuscinoses (INCL), an encephalopathy characterized by granular deposits in neurons, vision loss, seizures, mental deterioration, and brain death.<sup>4,5</sup> Cayman's PPT1 (human, recombinant) protein consists of 290 amino acids, has a calculated molecular weight of 32.7 kDa, and a predicted N-terminus of Asp28 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass is 35-41 kDa due to glycosylation.

## References

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2. Margraf, L.R., Boriack, R.L., Routheut, A.A., *et al.* Tissue expression and subcellular localization of CLN3, the Batten disease protein. *Mol. Genet. Metab.* **66(4)**, 283-289 (1999).
3. Rebecca, V.W., Nicastrì, M.C., Fennelly, C., *et al.* PPT1 promotes tumor growth and is the molecular target of chloroquine derivatives in cancer. *Cancer Discov.* **9(2)**, 220-229 (2019).
4. Vesa, J., Hellsten, E., Verkruyse, L.A., *et al.* Mutations in the palmitoyl protein thioesterase gene causing infantile neuronal ceroid lipofuscinosis. *Nature* **376(6541)**, 584-587 (1995).
5. Lu, J.-Y., Verkruyse, L.A., and Hofmann, S.L. Lipid thioesters derived from acylated proteins accumulate in infantile neuronal ceroid lipofuscinosis: Correction of the defect in lymphoblasts by recombinant palmitoyl-protein thioesterase. *Proc. Natl. Acad. Sci. USA* **93(19)**, 10046-10050 (1996).

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