

DESCRIPTION

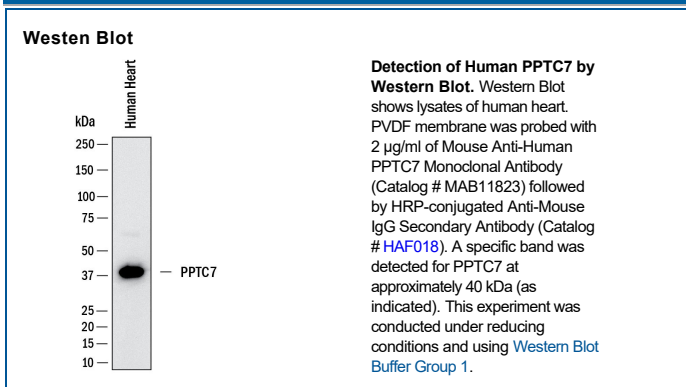
Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human PPTC7 around amino acid 200 in Direct ELISA.
Source	Monoclonal Mouse IgG _{2B} Clone # 1125845
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # Q8NI37
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	2 µg/mL	Human heart tissue

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

PPTC7 is a protein phosphatase that belongs to the PPM (protein phosphatase, Mg²⁺/Mn²⁺ dependent) family, with an approximate molecular weight of 38 kDa. Protein phosphatases such as PPTC7 play essential roles in the regulation of cellular processes by modulating the phosphorylation states of target proteins. PPTC7 is critical for mitochondrial biogenesis and function, specifically through its involvement in dephosphorylating mitochondrial proteins that regulate energy metabolism and oxidative phosphorylation. It is expressed ubiquitously across tissues, with particularly high levels observed in metabolically active cells. PPTC7 deficiency has been associated with impaired mitochondrial function, increased cellular stress, and dysregulated energy homeostasis. Studies suggest that PPTC7 plays a vital role in maintaining cellular energy balance and may contribute to pathological states such as metabolic disorders and neurodegenerative diseases. Dysregulation of PPTC7 function has been implicated in disrupted mitochondrial integrity, emphasizing its potential as both a biomarker and therapeutic target in mitochondrial dysfunction-related conditions.

References:

1. Niemi NM, Serrano LR, Muehlbauer LK, Balnis C, Kozul KL, Rashan EH, Shishkova E, Schueler KL, Keller MP, Attie AD, Pagan J, Coon JJ, Pagliarini DJ. Pptc7 maintains mitochondrial protein content by suppressing receptor-mediated mitophagy. *bioRxiv* [Preprint]. 2023 Mar 1:2023.02.28.530351. doi: 10.1101/2023.02.28.530351. Update in: *Nat Commun*. 2023 Oct 13;14(1):6431. doi: 10.1038/s41467-023-42069-w. PMID: 36909604; PMCID: PMC10002655.
2. González-Mariscal I, Martín-Montalvo A, Vázquez-Fonseca L, Pomares-Viciano T, Sánchez-Cuesta A, Fernández-Ayala DJ, Navas P, Santos-Ocana C. The mitochondrial phosphatase PPTC7 orchestrates mitochondrial metabolism regulating coenzyme Q10 biosynthesis. *Biochim Biophys Acta Bioenerg*. 2018 Nov;1859(11):1235-1248. doi: 10.1016/j.bbabo.2018.09.369. Epub 2018 Sep 26. PMID: 30267671. Pustovaya K, Venediktov A, Soldatov V, Kuzmin E, Pokidova K, Gartzeva V, Payushina O, Tsytsarev V, Meglinski I and Piavchenko G (2026) Recent insights into HSP70: proteostasis and beyond. *Front. Mol. Biosci*. 13:1791536. doi: 10.3389/fmolb.2026.1791536.
3. Wei L, Gok MO, Svoboda JD, Kozul KL, Forny M, Friedman JR, Niemi NM. Dual-localized PPTC7 limits mitophagy through proximal and dynamic interactions with BNIP3 and NIX. *Life Sci Alliance*. 2024 Jul 11;7(9):e202402765. doi: 10.26508/lsa.202402765. PMID: 38991726; PMCID: PMC11239977.