10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

LONP1 Antibody(Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP19551c

Product Information

Application	WB, E
Primary Accession	P36776
Other Accession	Q924S5, Q8CGK3, Q59HJ6, NP_004784.2
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB40823
Calculated MW	106489
Antigen Region	389-418

Additional Information

Gene ID	9361
Other Names	Lon protease homolog, mitochondrial {ECO:0000255|HAMAP-Rule:MF_03120}, 3421- {ECO:0000255|HAMAP-Rule:MF_03120}, LONHs, Lon protease-like protein {ECO:0000255|HAMAP-Rule:MF_03120}, LONP {ECO:0000255|HAMAP-Rule:MF_03120}, Mitochondrial ATP-dependent protease Lon {ECO:0000255|HAMAP-Rule:MF_03120}, Serine protease 15 {ECO:0000255|HAMAP-Rule:MF_03120}, LONP1 {ECO:0000255|HAMAP-Rule:MF_03120}, PRSS15
Target/Specificity	This LONP1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 389-418 amino acids from the Central region of human LONP1.
Dilution	WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	LONP1 Antibody(Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LONP1 {ECO:0000255|HAMAP-Rule:MF_03120}
Synonyms	PRSS15
Function	ATP-dependent serine protease that mediates the selective degradation of misfolded, unassembled or oxidatively damaged polypeptides as well as certain short-lived regulatory proteins in the mitochondrial matrix (PubMed:12198491, PubMed:15870080, PubMed:17579211, PubMed:37327776, PubMed:8248235). Endogenous substrates include mitochondrial steroidogenic acute regulatory (StAR) protein, DELE1, helicase Twinkle (TWNK) and the large ribosomal subunit protein MRPL32/bL32m (PubMed:17579211, PubMed:28377575, PubMed:37327776). MRPL32/bL32m is protected from degradation by LONP1 when it is bound to a nucleic acid (RNA), but TWNK is not (PubMed:17579211, PubMed:28377575). May also have a chaperone function in the assembly of inner membrane protein complexes (By similarity). Participates in the regulation of mitochondrial gene expression and in the maintenance of the integrity of the mitochondrial genome (PubMed:17420247). Binds to mitochondrial promoters and RNA in a single-stranded, site-specific, and strand-specific manner (PubMed:17420247). May regulate mitochondrial DNA replication and/or gene expression using site-specific, single-stranded DNA binding to target the degradation of regulatory proteins binding to adjacent sites in mitochondrial promoters (PubMed:14739292, PubMed:17420247).
Cellular Location	Mitochondrion matrix {ECO:0000255|HAMAP- Rule:MF_03120, ECO:0000269|PubMed:7961901}
Tissue Location	Duodenum, heart, lung and liver, but not thymus.

Background

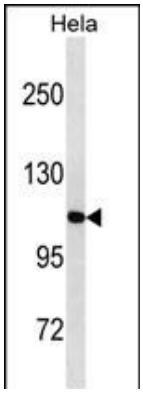
This gene encodes a mitochondrial matrix protein in the Lon family of ATP-dependent proteases. A similar E. coli protein regulates gene expression by targeting specific regulatory proteins for degradation. This protein binds a specific sequence in the light and heavy chain promoters of the mitochondrial genome which are involved in regulation of DNA replication and transcription.

References

Hansen, J., et al. Neuroscience 153(2):474-482(2008)
Chen, S.H., et al. Nucleic Acids Res. 36(4):1273-1287(2008)
Bogenhagen, D.F., et al. J. Biol. Chem. 283(6):3665-3675(2008)
Bayot, A., et al. Biochimie 90(2):260-269(2008)
Xue, X., et al. Nan Fang Yi Ke Da Xue Xue Bao 27(6):870-874(2007)

Images

LONP1 Antibody (Center) (Cat. #AP19551c) western blot analysis in Hela cell line lysates (35ug/lane).This demonstrates the LONP1 antibody detected the LONP1 protein (arrow).



Citations

- ALKBH7 mediates necrosis via rewiring of glyoxal metabolism

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.