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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, Canine, Chicken
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, ECO:0000312|HGNC:HGNC:9479}
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, PubMed:35870450, PubMed:38688959). 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). In addtion to its protease activity, has also an ATP-dependent protein folding chaperone activity and functions in mitochondrial protein folding (PubMed:33431889). 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

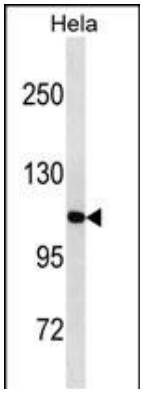
This gene encodes a mitochondrial matrix protein in the Lon family of ATP-dependent proteases. A similar E. coli protein regulates gene expression by targeting specific regulatory proteins for degradation. This protein binds a specific sequence in the light and heavy chain promoters of the mitochondrial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