Product Datasheet

LONP1 Antibody - BSA Free

NBP1-81734

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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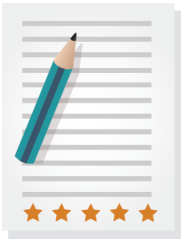
Updated 4/13/2025 v.20.1



NBP1-81734

LONP1 Antibody - BSA Free

Product Information

Unit Size	0.1 ml
Concentration	Concentrations vary lot to lot. See vial label for concentration. If unlisted please contact technical services.
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS (pH 7.2) and 40% Glycerol

Product Description

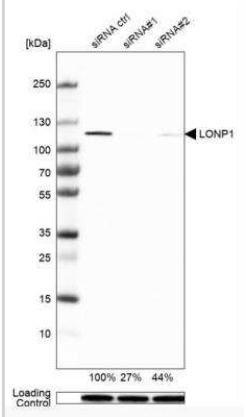
Host	Rabbit
Gene ID	9361
Gene Symbol	LONP1
Species	Human, Mouse, Rat, Drosophila
Reactivity Notes	Drosophila reactivity reported in scientific literature (PMID: 29467464).
Immunogen	This antibody was developed against Recombinant Protein corresponding to amino acids: VEEKIKQTHRKYLLQEQLKIIKKELGLEKDDKDAIEEKFRERLKELVVPKHVMDV VDEELSKLGLLDNHSSEFNVTRNYLDWLTSIPWGKYSNENLDLARAQAVLEED HYGMEDVKKRILEFIAVSQLRGSTQGKILCFYGP

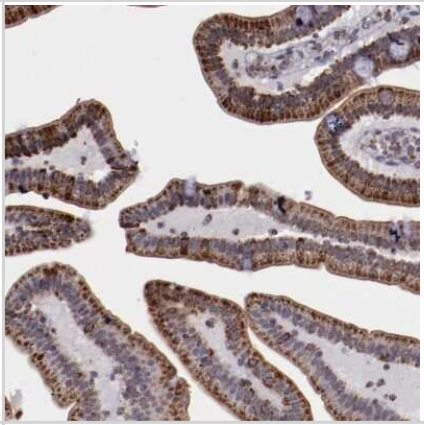
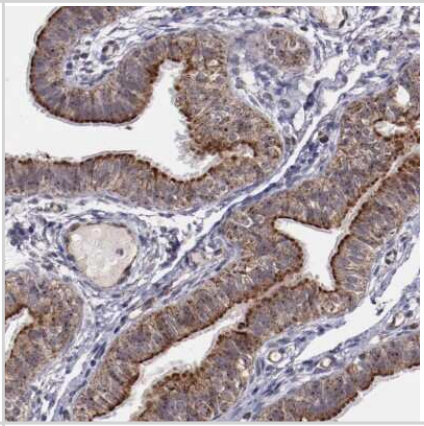
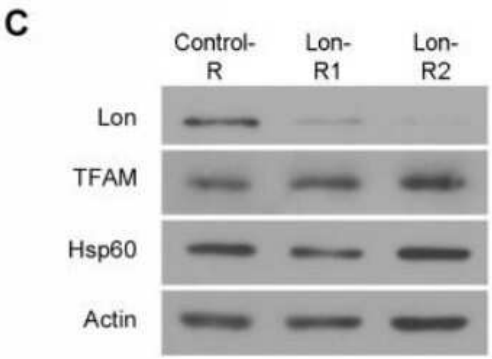
Product Application Details

Applications	Western Blot, Simple Western, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin, Knockdown Validated
Recommended Dilutions	Western Blot 0.04-0.4 ug/ml, Simple Western 1:20, Immunohistochemistry 1:500 - 1:1000, Immunocytochemistry/ Immunofluorescence 0.25-2 ug/ml, Immunohistochemistry-Paraffin 1:500 - 1:1000, Knockdown Validated
Application Notes	ICC/IF Fixation Permeabilization: Use PFA/Triton X-100. IHC-Paraffin HIER pH6 retrieval is recommended.

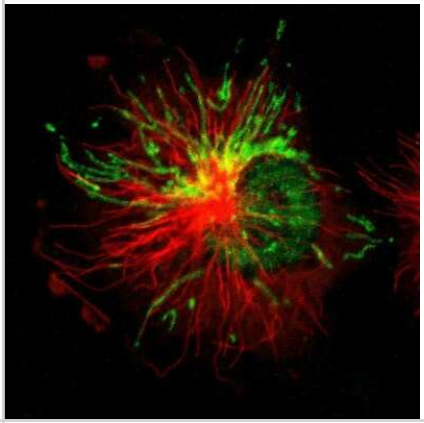
Images

Western Blot: LONP1 Antibody [NBP1-81734] - Analysis in A-431 cells transfected with control siRNA, target specific siRNA probe #1 and #2, using Anti-LONP1 antibody. Remaining relative intensity is presented. Loading control: Anti-GAPDH.

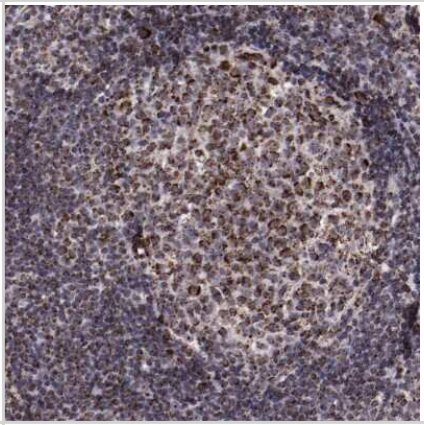


Simple Western: LONP1 Antibody [NBP1-81734] - Simple Western lane view shows a specific band for LONP1 in 0.2 mg/ml of h. Kidney (left) , NIH-3T3 (right) lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.	
Immunohistochemistry-Paraffin: LONP1 Antibody [NBP1-81734] - Staining of human duodenum shows granular cytoplasmic positivity in glandular cells.	
Immunohistochemistry-Paraffin: LONP1 Antibody [NBP1-81734] - Staining of human fallopian tube shows granular cytoplasmic positivity in glandular cells.	
Western Blot: LONP1 Antibody [NBP1-81734] - PINK1 accumulates upon knockdown of Lon. Western blot analysis of Lon protease (Lon), Mitochondrial transcription factor A (TFAM), Heat shock protein 60 (Hsp60) and Actin in whole head homogenate from control and Lon deficient animals. Image collected and cropped by CiteAb from the following publication (https://dx.plos.org/10.1371/journal.pgen.1004279), licensed under a CC-BY license.	

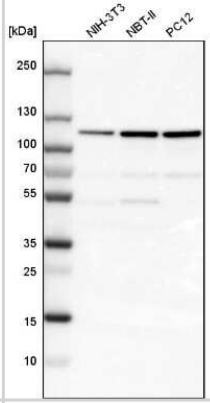
Immunocytochemistry/Immunofluorescence: LONP1 Antibody [NBP1-81734] - Staining of human cell line U-251 MG shows localization to nucleoplasm & mitochondria. Antibody staining is shown in green.



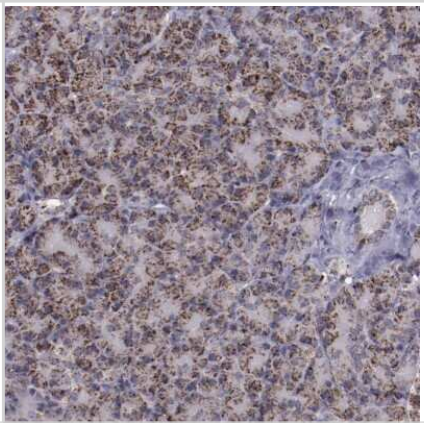
Immunohistochemistry-Paraffin: LONP1 Antibody [NBP1-81734] - Staining of human tonsil shows granular cytoplasmic positivity.

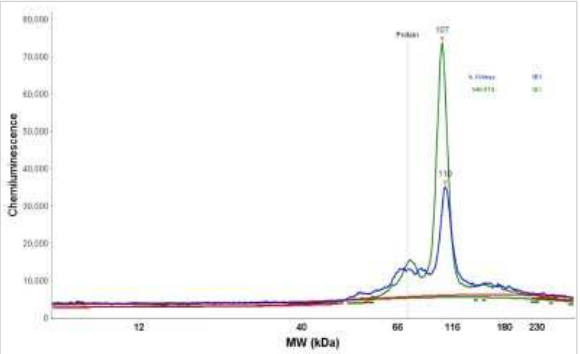
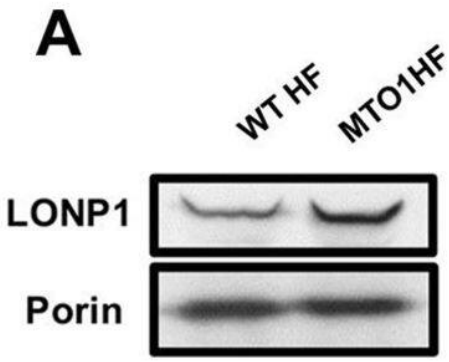
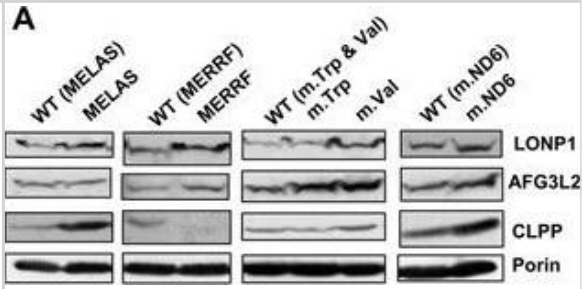


Western Blot: LONP1 Antibody [NBP1-81734] - Analysis in mouse cell line NIH-3T3, rat cell line NBT-II and rat cell line pC12.



Immunohistochemistry-Paraffin: LONP1 Antibody [NBP1-81734] - Staining of human pancreas shows granular cytoplasmic positivity.



Simple Western: LONP1 Antibody [NBP1-81734] - Electropherogram image(s) of corresponding Simple Western lane view. LONP1 antibody was used at 1:20 dilution on h. Kidney and NIH-3T3 lysate(s).	
Western Blot: LONP1 Antibody [NBP1-81734] - MTO1 defective cells exhibit proteostasis stress and an altered bioenergetic state. Representative immunoblot showing the expression of LONP1 in extracts of WT and MTO1 HF. Porin was used as a loading control. Image collected and cropped by CiteAb from the following publication (//pubmed.ncbi.nlm.nih.gov/29348686/) licensed under a CC-BY license.	
Western Blot: LONP1 Antibody [NBP1-81734] - Altered mitochondrial features in cybrid cells carrying MELAS, MERRF, m.5514 A > G (mt-tRNATrp), m.1643A > G (mt-tRNAVal), & m.14487 T > C (ND6) mutations. (A) Representative western blot of LONP1, AFG3L2 & CLPP peptidases in mutant & wild type (WT) cybrid cells. The membrane was also probed with porin as a loading control. Full-length western blots & lower-exposure blots of porin are included in supplementary information. (B) Densitometric analysis of LONP1, AFG3L2 & CLPP normalized to porin & represented as fold change relative to WT (top). Quantitative data are from at least three independent experiments. Results from this analysis are also shown as a heatmap (bottom). The color & the corresponding value in log2 scale are depicted on the left. (C) Representative Blue Native-PAGE of OXPHOS complexes in mutant & WT cybrid cells. Full-length blots & lower-exposure blots for those with high contrast are included in supplementary information. (D) Densitometric analysis of OXPHOS complexes normalized to complex-II (loading control) & represented as fold change relative to WT. (E) Cellular ATP determination in mutant & WT cybrid cells. (F & G) Determination of Ca2+ (F) & ROS (G) by flow cytometry in mutant & WT cybrid cells with Fluo-3 & MitoSOX Red, respectively. All data are the mean ± SEM of at least three different experiments. Differences from WT values were found to be statistically significant at *p < 0.05, **p < 0.01 & ***p < 0.001. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/28740091), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	

Publications

Pareek G, Pallanck LJ. Inactivation of the mitochondrial protease Afg3l2 results in severely diminished respiratory chain activity and widespread defects in mitochondrial gene expression PLOS Genetics 2020-10-19 [PMID: 33075064] (Western Blot)

Houston R, Sekine Y, Larsen MB et al. Discovery of bactericides as an acute mitochondrial membrane damage inducer Molecular Biology of the Cell 2021-11-01 [PMID: 34495738] (Immunocytochemistry/ Immunofluorescence)

Lane SL, Parks JC, Russ JE et al. Increased Systemic Antioxidant Power Ameliorates the Aging-Related Reduction in Oocyte Competence in Mice International Journal of Molecular Sciences 2021-12-01 [PMID: 34884824] (Simple Western)

Sekine Y, Houston R, Eckl EM et al. A mitochondrial iron-responsive pathway regulated by DELE1 Molecular cell 2023-06-15 [PMID: 37327776]

Di Rienzo M, Romagnoli A, Ciccosanti F Et al. AMBRA1 regulates mitophagy by interacting with ATAD3A and promoting PINK1 stability Autophagy 2021-11-19 [PMID: 34798798] (KD, Human)

Burska D, Stiburek L, Krizova J et al. Homozygous missense mutation in UQCRC2 associated with severe encephalomyopathy, mitochondrial complex III assembly defect and activation of mitochondrial protein quality control Biochimica et biophysica acta. Molecular basis of disease 2021-04-15 [PMID: 33865955]

Lee YG, Kim HW, Nam Y et al. LONP1 and ClpP cooperatively regulate mitochondrial proteostasis for cancer cell survival Oncogenesis 2021-02-26 [PMID: 33637676] (Human)

Trani G Characterization of patients with mitochondrial disease: assessment of the pathological phenotype associated with genes involved in mitochondrial quality control and dynamics. Thesis 2020-01-01 (WB, Human)

Ishikawa K, Kobayashi K, Yamada A et al. Concentration of mitochondrial DNA mutations by cytoplasmic transfer from platelets to cultured mouse cells PLoS ONE 2019-03-04 [PMID: 30830936] (WB, Mouse)

Sekine S, Wang C, Sideris DP et al. Reciprocal Roles of Tom7 and OMA1 during Mitochondrial Import and Activation of PINK1 Mol. Cell 2019-01-23 [PMID: 30733118] (Human)

Pareek G, Thomas RE, Vincow ES et al. Lon protease inactivation in Drosophila causes unfolded protein stress and inhibition of mitochondrial translation. Cell Death Discov. 2018-10-22 [PMID: 30374414] (WB, Drosophila)

Pareek G, Thomas RE, Pallanck LJ. Loss of the Drosophila m-AAA mitochondrial protease paraplegin results in mitochondrial dysfunction, shortened lifespan, and neuronal and muscular degeneration. Cell Death Dis. 2018-02-21 [PMID: 29467464] (WB, Drosophila)

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