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CLPX Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP10767b

Product Information

Application	IHC-P, FC, WB, E
Primary Accession	O76031
Other Accession	Q5U2U0, Q9JHS4, NP_006651.2
Reactivity	Human
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB24942
Calculated MW	69224
Antigen Region	449-477

Additional Information

Gene ID	10845
Other Names	ATP-dependent Clp protease ATP-binding subunit clpX-like, mitochondrial, CLPX
Target/Specificity	This CLPX antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 449-477 amino acids from the C-terminal region of human CLPX.
Dilution	IHC-P~~1:100~500 FC~~1:10~50 WB~~1:1000 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	CLPX Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CLPX (HGNC:2088)
Function	ATP-dependent chaperone that functions as an unfoldase. As part of the

	ClpXP protease complex, it recognizes specific protein substrates, unfolds them using energy derived from ATP hydrolysis, and then translocates them to the proteolytic subunit (CLPP) of the ClpXP complex for degradation (PubMed:11923310, PubMed:22710082, PubMed:28874591). Thanks to its chaperone activity, it also functions in the incorporation of the pyridoxal phosphate cofactor into 5- aminolevulinate synthase, thereby activating 5-aminolevulinate (ALA) synthesis, the first step in heme biosynthesis (PubMed:28874591). This chaperone is also involved in the control of mtDNA nucleoid distribution, by regulating mitochondrial transcription factor A (TFAM) activity (PubMed:22841477).
Cellular Location	Mitochondrion. Mitochondrion matrix, mitochondrion nucleoid
Tissue Location	Higher expression in skeletal muscle and heart and to a lesser extent in liver, brain, placenta, lung, kidney and pancreas.

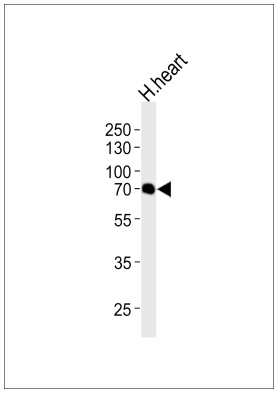
Background

ATP-dependent specificity component of the Clp protease. It directs the protease to specific substrates. Can perform chaperone functions in the absence of clpP (By similarity).

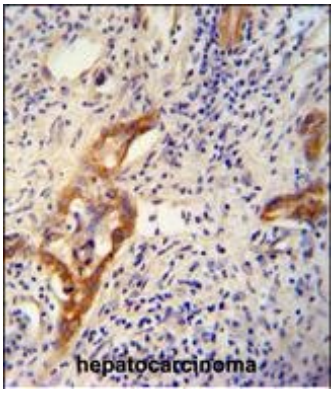
References

Martin, A., et al. Mol. Cell 29(4):441-450(2008) Bogenhagen, D.F., et al. J. Biol. Chem. 283(6):3665-3675(2008) Ewing, R.M., et al. Mol. Syst. Biol. 3, 89 (2007) : Kang, S.G., et al. J. Biol. Chem. 280(42):35424-35432(2005) Kang, S.G., et al. J. Biol. Chem. 277(23):21095-21102(2002)

Images

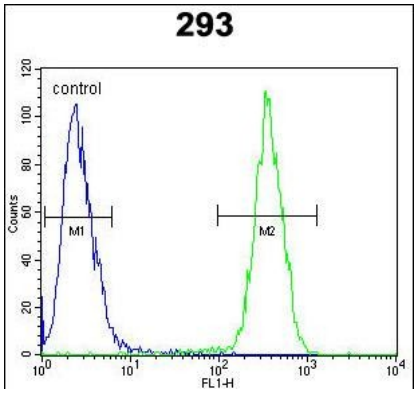


Western blot analysis of lysate from human heart tissue lysate, using CLPX Antibody (C-term)(Cat. #AP10767b). AP10767b was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug per lane.



CLPX antibody (C-term) (Cat. #AP10767b) immunohistochemistry analysis in formalin fixed and paraffin embedded human hepatocarcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the CLPX antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

CLPX Antibody (C-term) (Cat. #AP10767b) flow cytometric analysis of 293 cells (right histogram) compared to a



negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Loss of mitochondrial peptidase Clpp leads to infertility, hearing loss plus growth retardation via accumulation of CLPX, mtDNA and inflammatory factors.