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

YMEL1 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP4882a

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q96TA2
Other Accession	Q925S8, O88967
Reactivity	Human, Hamster
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB24746
Calculated MW	86455
Antigen Region	191-219

Additional Information

Gene ID	10730
Other Names	ATP-dependent zinc metalloprotease YME1L1, 3424-, ATP-dependent metalloprotease FtsH1, Meg-4, Presenilin-associated metalloprotease, PAMP, YME1-like protein 1, YME1L1, FTSH1, YME1L
Target/Specificity	This YMEL1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 191-219 amino acids from the N-terminal region of human YMEL1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 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	YMEL1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	YME1L1

Synonyms	FTSH1, YME1L
Function	ATP-dependent metalloprotease that catalyzes the degradation of folded and unfolded proteins with a suitable degron sequence in the mitochondrial intermembrane region (PubMed:24315374, PubMed:26923599, PubMed:27786171, PubMed:31695197, PubMed:33237841, PubMed:36206740). Plays an important role in regulating mitochondrial morphology and function by cleaving OPA1 at position S2, giving rise to a form of OPA1 that promotes maintenance of normal mitochondrial structure and mitochondrial protein metabolism (PubMed:18076378, PubMed:26923599, PubMed:27495975, PubMed:33237841). Ensures cell proliferation, maintains normal cristae morphology and complex I respiration activity, promotes antiapoptotic activity and protects mitochondria from the accumulation of oxidatively damaged membrane proteins (PubMed:22262461). Required to control the accumulation of nonassembled respiratory chain subunits (NDUFB6, OX4 and ND1) (PubMed:22262461). Involved in the mitochondrial adaptation in response to various signals, such as stress or developmental cues, by mediating degradation of mitochondrial proteins to rewire the mitochondrial proteome (PubMed:31695197). Catalyzes degradation of mitochondrial proteins, such as translocases, lipid transfer proteins and metabolic enzymes in response to nutrient starvation in order to limit mitochondrial biogenesis: mechanistically, YME1L is activated by decreased phosphatidylethanolamine levels caused by LPIN1 activity in response to mTORC1 inhibition (PubMed:31695197). Acts as a regulator of adult neural stem cell self-renewal by promoting mitochondrial proteome rewiring, preserving neural stem and progenitor cells self-renewal (By similarity). Required for normal, constitutive degradation of PRELID1 (PubMed:27495975). Catalyzes the degradation of OMA1 in response to membrane depolarization (PubMed:26923599). Mediates degradation of TIMM17A downstream of the integrated stress response (ISR) (PubMed:24315374). Catalyzes degradation of MICU1 when MICU1 is not assembled via an interchain disulfide (PubMed:36206740).
Cellular Location	Mitochondrion inner membrane Mitochondrion
Tissue Location	High expression in cardiac and skeletal muscle mitochondria.

Background

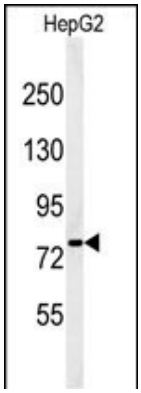
YMEL1 is the human ortholog of yeast mitochondrial AAA metalloprotease, Yme1p. It is localized in the mitochondria and can functionally complement a yme1 disruptant yeast strain. It is proposed that this gene plays a role in mitochondrial protein metabolism and could be involved in mitochondrial pathologies.

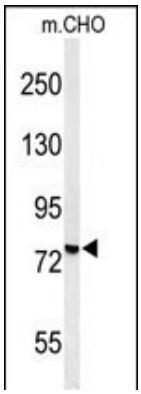
References

Grupe, A., et al. Am. J. Hum. Genet. 78(1):78-88(2006)
Deloukas, P., et al. Nature 429(6990):375-381(2004)
Clark, H.F., et al. Genome Res. 13(10):2265-2270(2003)

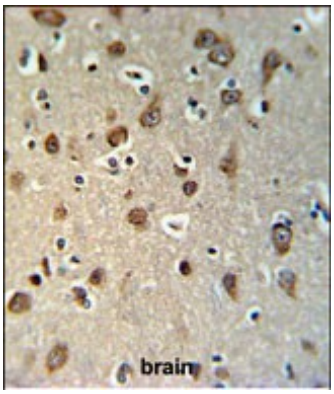
Images

Western blot analysis of YMEL1 Antibody (N-term) (Cat. #AP4882a) in HepG2 cell line lysates (35ug/lane). YMEL1 (arrow) was detected using the purified Pab.

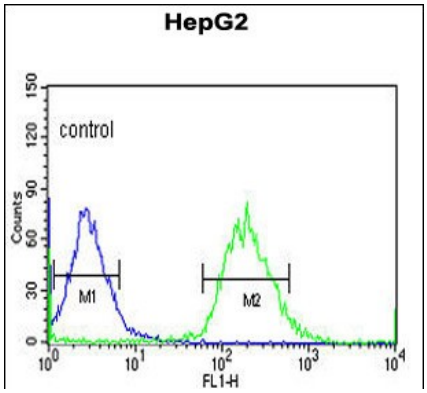




Western blot analysis of YMEL1 Antibody (N-term) (Cat. #AP4882a) in CHO cell line lysates (35ug/lane). YMEL1 (arrow) was detected using the purified Pab.



YMEL1 Antibody (N-term) (Cat. #AP4882a) IHC analysis in formalin fixed and paraffin embedded brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the YMEL1 Antibody (N-term) for immunohistochemistry. Clinical relevance has not been evaluated.



YMEL1 Antibody (N-term) (Cat. #AP4882a) flow cytometric analysis of HepG2 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Overexpression of MnSOD Protects against Cold Storage-Induced Mitochondrial Injury but Not against OMA1-Dependent OPA1 Proteolytic Processing in Rat Renal Proximal Tubular Cells
- Mitochondrial OPA1 cleavage is reversibly activated by differentiation of H9c2 cardiomyoblasts
- The first direct activity assay for the mitochondrial protease OMA1.
- Renal cold storage followed by transplantation impairs expression of key mitochondrial fission and fusion proteins.

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