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OMA1 antibody - middle region

Rabbit Polyclonal Antibody
Catalog # AI13463

Product Information

Application	WB
Primary Accession	Q96E52
Other Accession	NM_145243, NP_660286
Reactivity	Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Dog, Guinea Pig, Horse, Bovine, Yeast
Predicted	Human, Mouse, Rat, Rabbit, Pig, Chicken, Dog, Guinea Pig, Horse, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	60120

Additional Information

Gene ID	115209
Alias Symbol	2010001O09Rik, DAB1, FLJ33782, MPRP-1, YKR087C, ZMPOMA1
Other Names	Metalloendopeptidase OMA1, mitochondrial, 3.4.24.-, Metalloprotease-related protein 1, MPRP-1, Overlapping with the m-AAA protease 1 homolog, OMA1, MPRP1
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-OMA1 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	OMA1 antibody - middle region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	OMA1 {ECO:0000303|PubMed:20038677, ECO:0000312|HGNC:HGNC:29661}
Function	Metalloprotease that is part of the quality control system in the inner membrane of mitochondria (PubMed:20038677, PubMed:25605331, PubMed:32132706, PubMed:32132707). Activated in response to various mitochondrial stress, leading to the proteolytic cleavage of target proteins, such as OPA1, UQCC3 and DELE1 (PubMed:20038677, PubMed:25275009, PubMed:32132706, PubMed:32132707). Involved in the fusion of the mitochondrial inner membranes by mediating cleavage of OPA1 at S1 position, generating the soluble OPA1 (S-OPA1), which cooperates with the

membrane form (L-OPA1) to coordinate the fusion of mitochondrial inner membranes (PubMed:31922487). Following stress conditions that induce loss of mitochondrial membrane potential, mediates cleavage of OPA1, leading to excess production of soluble OPA1 (S-OPA1) and negative regulation of mitochondrial fusion (PubMed:20038677, PubMed:25275009). Involved in mitochondrial safeguard in response to transient mitochondrial membrane depolarization (flickering) by catalyzing cleavage of OPA1, leading to excess production of S-OPA1, preventing mitochondrial hyperfusion (By similarity). Also acts as a regulator of apoptosis: upon BAK and BAX aggregation, mediates cleavage of OPA1, leading to the remodeling of mitochondrial cristae and allowing the release of cytochrome c from mitochondrial cristae (PubMed:25275009). In depolarized mitochondria, may also act as a backup protease for PINK1 by mediating PINK1 cleavage and promoting its subsequent degradation by the proteasome (PubMed:30733118). May also cleave UQCC3 in response to mitochondrial depolarization (PubMed:25605331). Also acts as an activator of the integrated stress response (ISR): in response to mitochondrial stress, mediates cleavage of DELE1 to generate the processed form of DELE1 (S- DELE1), which translocates to the cytosol and activates EIF2AK1/HRI to trigger the ISR (PubMed:32132706, PubMed:32132707). Its role in mitochondrial quality control is essential for regulating lipid metabolism as well as to maintain body temperature and energy expenditure under cold-stress conditions (By similarity). Binds cardiolipin, possibly regulating its protein turnover (By similarity). Required for the stability of the respiratory supercomplexes (By similarity).

Cellular Location

Mitochondrion inner membrane; Single-pass membrane protein {ECO:0000250|UniProtKB:Q9D8H7}

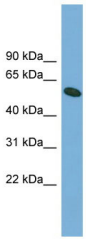
Tissue Location

Widely expressed, with strong expression in the heart, skeletal muscle, kidney and liver

References

Bao Y.-C.,et al.DNA Res. 10:123-128(2003).
Gregory S.G.,et al.Nature 441:315-321(2006).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Head B.,et al.J. Cell Biol. 187:959-966(2009).

Images



WB Suggested Anti-OMA1 Antibody Titration: 0.2-1 µg/ml
Positive Control: 721_B cell lysate

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