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OPA1 Rabbit mAb

Catalog # AP76972

Product Information

Application	WB, IHC-P, IF, FC, ICC
Primary Accession	O60313
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Immunogen	A synthesized peptide derived from human OPA1
Purification	Affinity Chromatography
Calculated MW	111631

Additional Information

Gene ID	4976
Other Names	OPA1
Dilution	WB~~1/500-1/1000 IHC-P~~N/A IF~~1:50~200 FC~~1:10~50 ICC~~N/A
Format	Liquid in 10mM PBS, pH 7.4, 150mM sodium chloride, 0.05% BSA, 0.02% sodium azide and 50% glycerol.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	OPA1
Function	Dynamin-related GTPase that is essential for normal mitochondrial morphology by mediating fusion of the mitochondrial inner membranes, regulating cristae morphology and maintaining respiratory chain function (PubMed:16778770, PubMed:17709429, PubMed:20185555, PubMed:24616225, PubMed:28628083, PubMed:28746876, PubMed:31922487, PubMed:32228866, PubMed:32567732, PubMed:33130824, PubMed:33237841, PubMed:37612504, PubMed:37612506). Exists in two forms: the transmembrane, long form (Dynamin-like GTPase OPA1, long form; L-OPA1), which is tethered to the inner mitochondrial membrane, and the short soluble form (Dynamin-like GTPase OPA1, short form; S-OPA1), which results from proteolytic cleavage and localizes in the intermembrane space (PubMed:31922487, PubMed:32228866, PubMed:33237841, PubMed:37612504, PubMed:37612506). Both forms (L-OPA1 and S-OPA1) cooperate to catalyze

	the fusion of the mitochondrial inner membrane (PubMed:31922487, PubMed:37612504, PubMed:37612506). The equilibrium between L-OPA1 and S-OPA1 is essential: excess levels of S-OPA1, produced by cleavage by OMA1 following loss of mitochondrial membrane potential, lead to an impaired equilibrium between L-OPA1 and S-OPA1, inhibiting mitochondrial fusion (PubMed:20038677, PubMed:31922487). The balance between L-OPA1 and S-OPA1 also influences cristae shape and morphology (By similarity). Involved in remodeling cristae and the release of cytochrome c during apoptosis (By similarity). Proteolytic processing by PARL in response to intrinsic apoptotic signals may lead to disassembly of OPA1 oligomers and release of the caspase activator cytochrome C (CYCS) into the mitochondrial intermembrane space (By similarity). Acts as a regulator of T-helper Th17 cells, which are characterized by cells with fused mitochondria with tight cristae, by mediating mitochondrial membrane remodeling: OPA1 is required for interleukin-17 (IL-17) production (By similarity). Its role in mitochondrial morphology is required for mitochondrial genome maintenance (PubMed:18158317, PubMed:20974897).
Cellular Location	[Dynamin-like GTPase OPA1, long form]: Mitochondrion inner membrane; Single-pass membrane protein. Note=Detected at contact sites between endoplasmic reticulum and mitochondrion membranes.
Tissue Location	Highly expressed in retina (PubMed:11017079, PubMed:11017080, PubMed:11810270). Also expressed in brain, testis, heart and skeletal muscle (PubMed:11810270). Low levels of all isoforms expressed in a variety of tissues (PubMed:11810270) [Isoform 2]: Isoform 2 expressed in colon, liver, kidney, thyroid gland and leukocytes.