

**OPA1 Antibody**  
Rabbit mAb  
Catalog # AP91465

## Specification

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### OPA1 Antibody - Product Information

Application	WB, IHC, FC, ICC
Primary Accession	<a href="#">O60313</a>
Reactivity	Rat
Clonality	Monoclonal
<b>Other Names</b>	
Large GTP binding protein; largeG; MGM1; Mitochondrial dynamin like GTPase; NPG; NTG; OAK; OPA 1;	
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	111631 Da

### OPA1 Antibody - Additional Information

Purification	<b>Affinity-chromatography</b>
Immunogen	<b>A synthesized peptide derived from human OPA1</b>
Description	<b>Dynamin-related GTPase required for mitochondrial fusion and regulation of apoptosis. May form a diffusion barrier for proteins stored in mitochondrial cristae. Proteolytic processing 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.</b>
Storage Condition and Buffer	<b>Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.</b>

### OPA1 Antibody - 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](http://www.uniprot.org/citations/16778770), PubMed: [17709429](http://www.uniprot.org/citations/17709429), PubMed: [17709429](http://www.uniprot.org/citations/20185555), PubMed: [20185555](http://www.uniprot.org/citations/20185555))

target="\_blank">20185555</a>, PubMed:<a href="http://www.uniprot.org/citations/24616225" target="\_blank">24616225</a>, PubMed:<a href="http://www.uniprot.org/citations/28628083" target="\_blank">28628083</a>, PubMed:<a href="http://www.uniprot.org/citations/28746876" target="\_blank">28746876</a>, PubMed:<a href="http://www.uniprot.org/citations/31922487" target="\_blank">31922487</a>, PubMed:<a href="http://www.uniprot.org/citations/32228866" target="\_blank">32228866</a>, PubMed:<a href="http://www.uniprot.org/citations/32567732" target="\_blank">32567732</a>, PubMed:<a href="http://www.uniprot.org/citations/33130824" target="\_blank">33130824</a>, PubMed:<a href="http://www.uniprot.org/citations/33237841" target="\_blank">33237841</a>, PubMed:<a href="http://www.uniprot.org/citations/37612504" target="\_blank">37612504</a>, PubMed:<a href="http://www.uniprot.org/citations/37612506" target="\_blank">37612506</a>). Exists in two forms: the transmembrane, long form (Dynamain-like GTPase OPA1, long form; L-OPA1), which is tethered to the inner mitochondrial membrane, and the short soluble form (Dynamain-like GTPase OPA1, short form; S-OPA1), which results from proteolytic cleavage and localizes in the intermembrane space (PubMed:<a href="http://www.uniprot.org/citations/31922487" target="\_blank">31922487</a>, PubMed:<a href="http://www.uniprot.org/citations/32228866" target="\_blank">32228866</a>, PubMed:<a href="http://www.uniprot.org/citations/33237841" target="\_blank">33237841</a>, PubMed:<a href="http://www.uniprot.org/citations/37612504" target="\_blank">37612504</a>, PubMed:<a href="http://www.uniprot.org/citations/37612506" target="\_blank">37612506</a>). Both forms (L-OPA1 and S-OPA1) cooperate to catalyze the fusion of the mitochondrial inner membrane (PubMed:<a href="http://www.uniprot.org/citations/31922487" target="\_blank">31922487</a>, PubMed:<a href="http://www.uniprot.org/citations/37612504" target="\_blank">37612504</a>, PubMed:<a href="http://www.uniprot.org/citations/37612506" target="\_blank">37612506</a>). 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:<a href="http://www.uniprot.org/citations/20038677" target="\_blank">20038677</a>, PubMed:<a href="http://www.uniprot.org/citations/31922487" target="\_blank">31922487</a>). 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:<a href="http://www.uniprot.org/citations/18158317" target="\_blank">18158317</a>, PubMed:<a href="http://www.uniprot.org/citations/20974897" target="\_blank">20974897</a>).

### Cellular Location

[Dynamain-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.

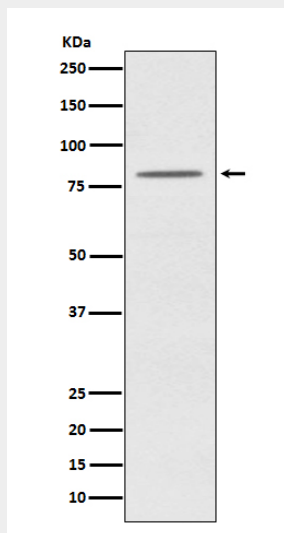
### OPA1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)

- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### OPA1 Antibody - Images



Western blot analysis of OPA1 expression in HeLa cell lysate.