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

OPA1(form S1) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20727c

Specification

OPA1(form S1) Antibody (C-term) - Product Information

Application	**WB,E**
Primary Accession	O60313
Other Accession	Q2TA68, P58281, Q5U3A7, Q5F499
Reactivity	**Human, Mouse, Rat**
Predicted	**Chicken, Zebrafish**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**111631**

OPA1(form S1) Antibody (C-term) - Additional Information

Gene ID 4976

Other Names
Dynamin-like 120 kDa protein, mitochondrial, Optic atrophy protein 1, Dynamin-like 120 kDa protein, form S1, OPA1, KIAA0567

Target/Specificity
This OPA1(form S1) antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 895-929 amino acids from the C-terminal region of human OPA1(form S1).

Dilution
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
OPA1(form S1) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

OPA1(form S1) Antibody (C-term) - 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.

OPA1(form S1) Antibody (C-term) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

OPA1(form S1) Antibody (C-term) - Images

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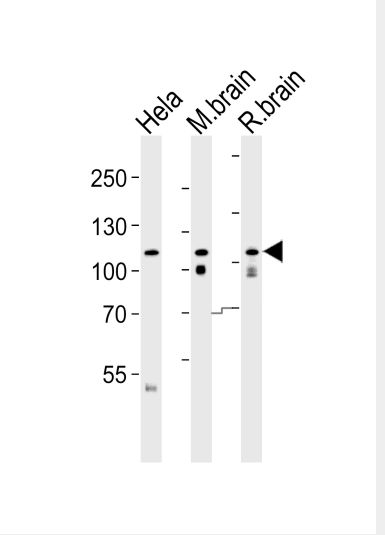

Western blot analysis of lysates from Hela cell line , mouse brain and rat brain tissue lysate(from left to right), using OPA1(form S1) Antibody (C-term)(Cat. #AP20727c). AP20727c was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

OPA1(form S1) Antibody (C-term) - Background

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.

OPA1(form S1) Antibody (C-term) - References

Nagase T.,et al.DNA Res. 5:31-39(1998).
Wang W.,et al.Nucleic Acids Res. 39:44-58(2011).
Muzny D.M.,et al.Nature 440:1194-1198(2006).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.
Delettre C.,et al.Hum. Genet. 109:584-591(2001).

OPA1(form S1) Antibody (C-term) - Citations

- Mitochondrial transplantation reduces lower limb ischemia-reperfusion injury by increasing skeletal muscle energy and adipocyte browning
- MCCC2 is a novel mediator between mitochondria and telomere and functions as an oncogene in colorectal cancer