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Anti-OPA1 Picoband Antibody
Catalog # ABO12417

Specification

Anti-OPA1 Picoband Antibody - Product Information

Application	**WB, IHC**
Primary Accession	O60313
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Dynamin-like 120 kDa protein, mitochondrial(OPA1) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-OPA1 Picoband Antibody - Additional Information

Gene ID 4976

Other Names
Dynamin-like 120 kDa protein, mitochondrial, 3.6.5.5, Optic atrophy protein 1, Dynamin-like 120 kDa protein, form S1, OPA1, KIAA0567

Calculated MW
111631 MW KDa

Application Details
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat

Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization
Mitochondrion inner membrane ; Single-pass membrane protein . Mitochondrion intermembrane space .

Tissue Specificity
Highly expressed in retina. Also expressed in brain, testis, heart and skeletal muscle. Isoform 1 expressed in retina, skeletal muscle, heart, lung, ovary, colon, thyroid gland, leukocytes and fetal brain. Isoform 2 expressed in colon, liver, kidney, thyroid gland and leukocytes. Low levels of all isoforms expressed in a variety of tissues. .

Protein Name
Dynamin-like 120 kDa protein, mitochondrial

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence at the C-terminus of human OPA1 (919-955aa EDGEKKIKLLTGKRVQLAEDLKKVREIQEKLDAFIEA), different from the related mouse and rat sequences by one amino acid.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins.

Storage	**At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.**

Anti-OPA1 Picoband 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, 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.

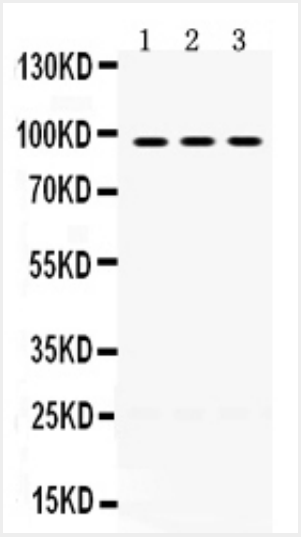
Tissue Location
Highly expressed in retina (PubMed:11017079, PubMed:11017080, PubMed:11810270). Also expressed in brain, testis, heart and skeletal muscle (PubMed:11810270). Low levels of all isoforms expressed in a variety of tissues (PubMed:11810270) [Isoform 2]: Isoform 2 expressed in colon, liver, kidney, thyroid gland and leukocytes.

Anti-OPA1 Picoband 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 Cytomety
- Cell Culture

Anti-OPA1 Picoband Antibody - Images



Anti- OPA1 Picoband antibody, ABO12417, Western blottingAll lanes: Anti OPA1 (ABO12417) at

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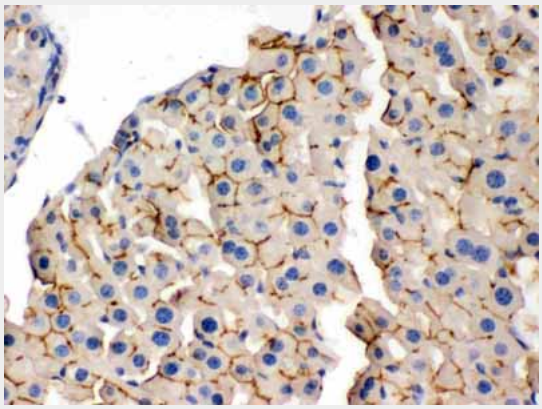
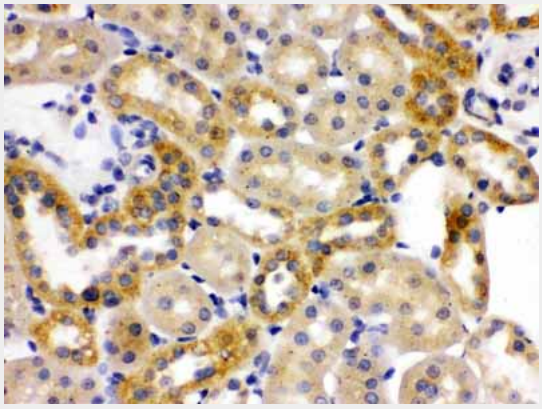
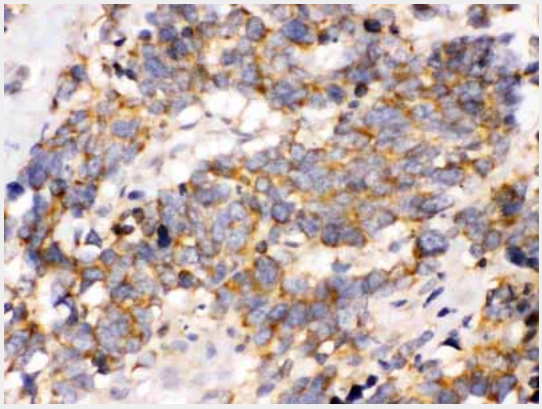
0.5ug/mlLane 1: A549 Whole Cell Lysate at 40ugLane 2: SKOV Whole Cell Lysate at 40ugLane 3: SW620 Whole Cell Lysate at 40ugPredicted bind size: 110KDObserved bind size: 95KD



Anti- OPA1 Picoband antibody, ABO12417, IHC(P)IHC(P): Mouse Liver Tissue



Anti- OPA1 Picoband antibody, ABO12417, IHC(P)IHC(P): Rat Kidney Tissue



Anti- OPA1 Picoband antibody, ABO12417, IHC(P)IHC(P): Human Lung Cancer Tissue

Anti-OPA1 Picoband Antibody - Background

Dynamin-like 120 kDa protein, mitochondrial is a protein that in humans is encoded by the OPA1 gene. It is mapped to 3q29. This protein regulates mitochondrial fusion and cristae structure in the inner mitochondrial membrane (IMM) and contributes to ATP synthesis and apoptosis. This gene product is a nuclear-encoded mitochondrial protein with similarity to dynamin-related GTPases. It is a component of the mitochondrial network. Mutations in this gene have been associated with optic atrophy type 1, which is a dominantly inherited optic neuropathy resulting in progressive loss of visual acuity, leading in many cases to legal blindness. Multiple transcript variants encoding

different isoforms have been found for this gene.