Human OPA1 Antibody

Monoclonal Mouse IgG Clone # 1088319
Catalog Number: MAB11631

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human OPA1 around amino acid 200 in Direct ELISA.
Source	Monoclonal Mouse IgG Clone # 1088319
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Synthetic Peptide Accession # O60313
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	MCF-7 human breast cancer cell line and MDA-MB-231 human breast cancer cell line
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human kidney
Simple Western	100 µg/mL	MDA-MB-231 human breast cancer cell line

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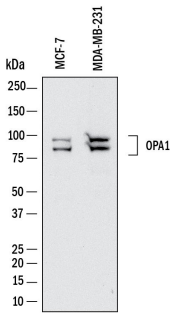
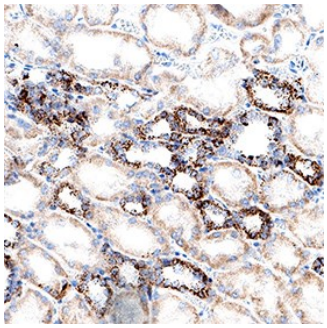
DATA

Western Blot



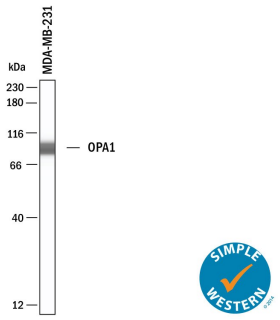
Detection of Human OPA1 by Western Blot. Western Blot shows lysates of MCF-7 human breast cancer cell line and MDA-MB-231 human breast cancer cell line. PVDF membrane was probed with 2 µg/ml of Mouse Anti-Human OPA1 Monoclonal Antibody (Catalog # MAB11631) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). Specific bands were detected for OPA1 at approximately 80 and 100 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

Immunohistochemistry



Detection of OPA1 in Human Kidney. OPA1 was detected in immersion fixed paraffin-embedded sections of human kidney using Mouse Anti-Human OPA1 Monoclonal Antibody (Catalog # MAB11631) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the mitochondrial membrane. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Simple Western



Detection of Human OPA1 by Simple Western™. Simple Western shows lysates of MDA-MB-231 human breast cancer cell line, loaded at 0.5 mg/ml. A specific band was detected for OPA1 at approximately 90 kDa (as indicated) using 100 µg/mL of Mouse Anti-Human OPA1 Monoclonal Antibody (Catalog # MAB11631). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Optic Atrophy-1 (OPA1), aka Dynamin-like 120 kDa protein, mitochondrial, is a Dynamin-related GTPase required for mitochondrial fusion and regulation of apoptosis. OPA1 exists as a single-pass membrane protein in the mitochondrion inner membrane as well as in soluble forms in mitochondrion intermembrane space, and is expressed in retina, brain, testis, heart, skeletal muscles. Human OPA1 binds PARL and interacts with CHCHD3 as well as IMMT (preferentially with soluble OPA1 forms). 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 mitochondrial intermembrane space. OPA1 protein form S1 is an inactive form produced by cleavage at S1 position by metalloendopeptidase OMA1 following stress conditions that induce loss of mitochondrial membrane potential, leading to negative regulation of mitochondrial fusion. Defects in OPA1 have been linked to optic atrophy type 1 (OPA1) and dominant optic atrophy plus syndrome (DOA+).

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