

Anti-VDAC/Porin Antibody
Catalog # ABO11086

Specification

Anti-VDAC/Porin Antibody - Product Information

Application	WB, IHC, ICC
Primary Accession	P21796
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Voltage-dependent anion-selective channel protein 1(VDAC1) detection. Tested with WB, IHC-P, IHC-F, ICC in Human;Mouse;Rat.

Reconstitution

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

Anti-VDAC/Porin Antibody - Additional Information

Gene ID 7416

Other Names

Voltage-dependent anion-selective channel protein 1, VDAC-1, hVDAC1, Outer mitochondrial membrane protein porin 1, Plasmalemmal porin, Porin 31HL, Porin 31HM, VDAC1, VDAC

Calculated MW

30773 MW KDa

Application Details

Immunocytochemistry , 0.5-1 µg/ml, Human, Mouse, Rat
Immunohistochemistry(Frozen Section), 0.5-1 µg/ml, Rat, Human, Mouse
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat

Subcellular Localization

Mitochondrion outer membrane . Cell membrane .

Tissue Specificity

Heart, liver and skeletal muscle.

Protein Name

Voltage-dependent anion-selective channel protein 1(VDAC-1/hVDAC1)

Contents

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

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human VDAC(163-178aa

RVTQSNFAVGKYKTDEF), identical to the related rat and mouse sequences.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After reconstitution, 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.

Sequence Similarities

Belongs to the eukaryotic mitochondrial porin family.

Anti-VDAC/Porin Antibody - Protein Information

Name VDAC1 ([HGNC:12669](#))

Synonyms VDAC

Function

Non-selective voltage-gated ion channel that mediates the transport of anions and cations through the mitochondrion outer membrane and plasma membrane (PubMed:[10661876](http://www.uniprot.org/citations/10661876), PubMed:[11845315](http://www.uniprot.org/citations/11845315), PubMed:[18755977](http://www.uniprot.org/citations/18755977), PubMed:[30061676](http://www.uniprot.org/citations/30061676), PubMed:[8420959](http://www.uniprot.org/citations/8420959)). The channel at the outer mitochondrial membrane allows diffusion of small hydrophilic molecules; in the plasma membrane it is involved in cell volume regulation and apoptosis (PubMed:[10661876](http://www.uniprot.org/citations/10661876), PubMed:[11845315](http://www.uniprot.org/citations/11845315), PubMed:[18755977](http://www.uniprot.org/citations/18755977), PubMed:[8420959](http://www.uniprot.org/citations/8420959)). It adopts an open conformation at low or zero membrane potential and a closed conformation at potentials above 30-40 mV (PubMed:[10661876](http://www.uniprot.org/citations/10661876), PubMed:[18755977](http://www.uniprot.org/citations/18755977), PubMed:[8420959](http://www.uniprot.org/citations/8420959)). The open state has a weak anion selectivity whereas the closed state is cation-selective (PubMed:[18755977](http://www.uniprot.org/citations/18755977), PubMed:[8420959](http://www.uniprot.org/citations/8420959)). Binds various signaling molecules, including the sphingolipid ceramide, the phospholipid phosphatidylcholine, and the sterols cholesterol and oxysterol (PubMed:[18755977](http://www.uniprot.org/citations/18755977), PubMed:[31015432](http://www.uniprot.org/citations/31015432)). In depolarized mitochondria, acts downstream of PRKN and PINK1 to promote mitophagy or prevent apoptosis; polyubiquitination by PRKN promotes mitophagy, while monoubiquitination by PRKN decreases mitochondrial calcium influx which ultimately inhibits apoptosis (PubMed:[32047033](http://www.uniprot.org/citations/32047033)). May participate in the formation of the permeability transition pore complex (PTPC) responsible for the release of mitochondrial products that triggers apoptosis (PubMed:[15033708](http://www.uniprot.org/citations/15033708), PubMed:[25296756](http://www.uniprot.org/citations/25296756)). May mediate

ATP export from cells (PubMed:30061676). Part of a complex composed of HSPA9, ITPR1 and VDAC1 that regulates mitochondrial calcium-dependent apoptosis by facilitating calcium transport from the ER lumen to the mitochondria intermembrane space thus providing calcium for the downstream calcium channel MCU that directly releases it into mitochondria matrix (By similarity). Mediates cytochrome c efflux (PubMed:20230784).

Cellular Location

Mitochondrion outer membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Membrane raft; Multi-pass membrane protein. Note=Found in a complex with HSPA9 and VDAC1 at the endoplasmic reticulum- mitochondria contact sites. {ECO:0000250|UniProtKB:Q9Z2L0}

Tissue Location

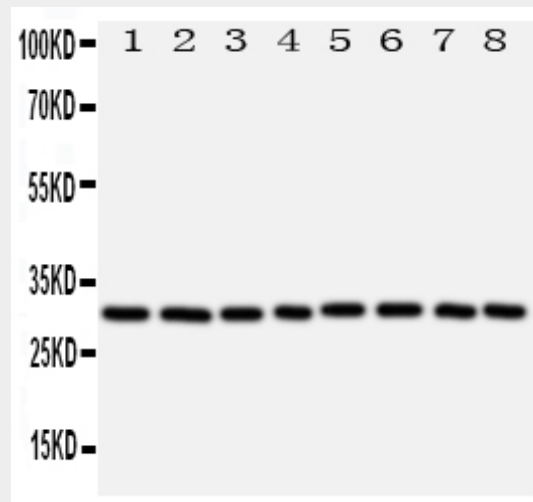
Expressed in erythrocytes (at protein level) (PubMed:27641616). Expressed in heart, liver and skeletal muscle (PubMed:8420959).

Anti-VDAC/Porin Antibody - Protocols

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

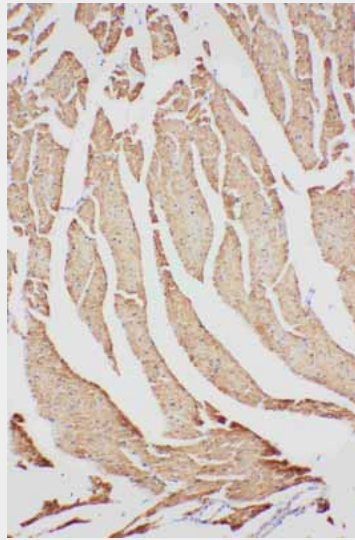
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-VDAC/Porin Antibody - Images

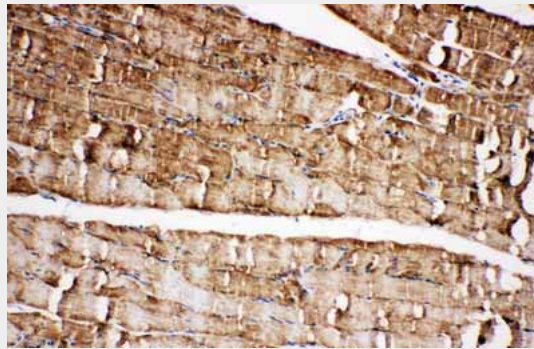


Anti-VDAC/Porin antibody, ABO11086, Western blotting All lanes: Anti VDAC/Porin (ABO11086) at 0.5ug/ml Lane 1: Rat Skeletal Muscle Tissue Lysate at 50ug Lane 2: Rat Heart Tissue Lysate at 50ug Lane 3: Rat Liver Tissue Lysate at 50ug Lane 4: HELA Whole Cell Lysate at 40ug Lane 5: A431 Whole Cell Lysate at 40ug Lane 6: A549 Whole Cell Lysate at 40ug Lane 7: SMMC Whole Cell Lysate at 40ug Lane 8: HT1080 Whole Cell Lysate at 40ug Predicted bind size: 31KDa Observed bind size:

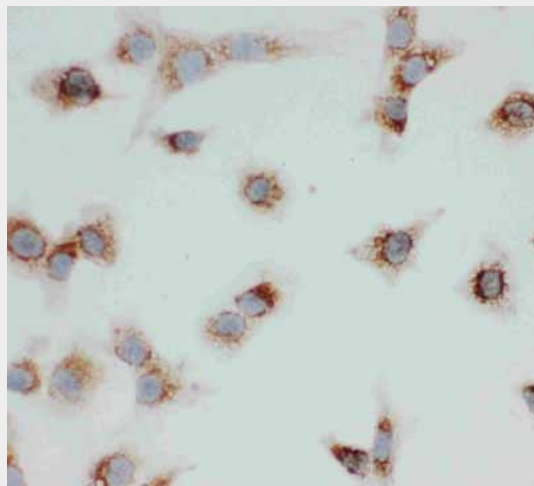
31KD



Anti-VDAC/Porin antibody, ABO11086, IHC(P)IHC(P): Rat Cardiac Muscle Tissue



Anti-VDAC/Porin antibody, ABO11086, IHC(P)IHC(P): Rat Skeletal Muscle Tissue



Anti-VDAC/Porin antibody, ABO11086, ICCICC: NIH3T3 Cell

Anti-VDAC/Porin Antibody - Background

The voltage-dependent anion channel (VDAC) of the outer mitochondrial membrane is a small, abundant outer membrane pore-forming protein found in the outer membranes of all eukaryotic mitochondria. The VDAC protein is thought to form the major pathway for movement of adenine nucleotides through the outer membrane and to be the mitochondrial binding site for hexokinase

and glycerol kinase. At low transmembrane voltage, VDAC is open for anions such as phosphate, chloride, and adenine nucleotides. At higher transmembrane voltage, VDAC functions as a selective channel for cations and uncharged molecules. These features make VDAC likely to play a role in mitochondrial energy metabolism. Huizing et al. studied by Northern and Western blot analyses the human tissue distribution of mitochondrial transmembrane metabolite carriers. They found that VDAC1 mRNA has a ubiquitous distribution, with most pronounced expression in heart, liver, and skeletal muscle, whereas the VDAC2 isoform appears to be expressed only in the heart.