

**Anti-VDAC/Porin Picoband Antibody**  
**Catalog # ABO12144****Specification**

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**Anti-VDAC/Porin Picoband Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P21796</a>
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 in Human; Mouse; Rat.

**Reconstitution**

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

**Anti-VDAC/Porin Picoband 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**

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

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence in the middle region of human VDAC/Porin (154-181aa QMNFETAKSRVTQSNFAVGKYKTDEFQLH), 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 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 Picoband 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](http://www.uniprot.org/citations/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:<a href="http://www.uniprot.org/citations/20230784" target="\_blank">20230784</a>).

#### 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

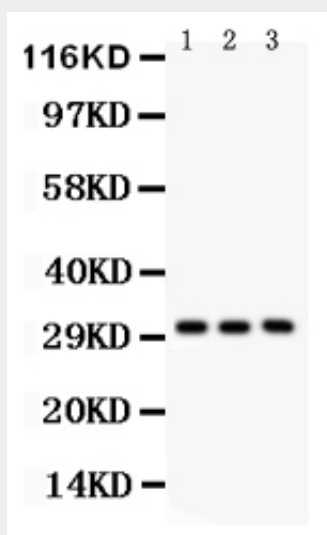
Expressed in erythrocytes (at protein level) (PubMed:27641616). Expressed in heart, liver and skeletal muscle (PubMed:8420959).

### Anti-VDAC/Porin Picoband Antibody - Protocols

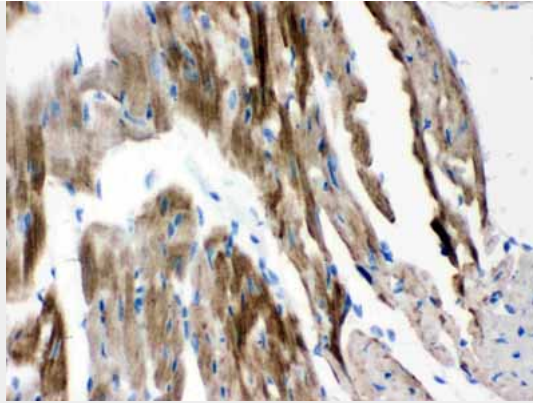
Provided below are standard protocols that you may find useful for product applications.

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

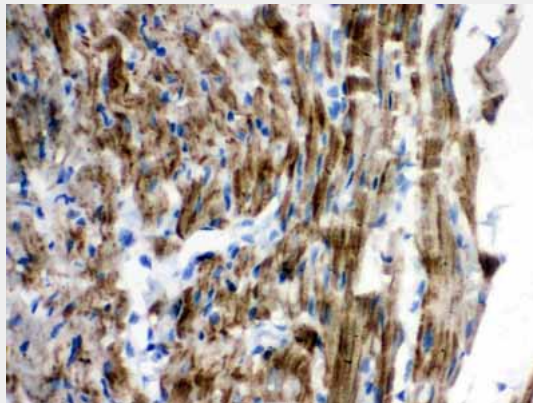
### Anti-VDAC/Porin Picoband Antibody - Images



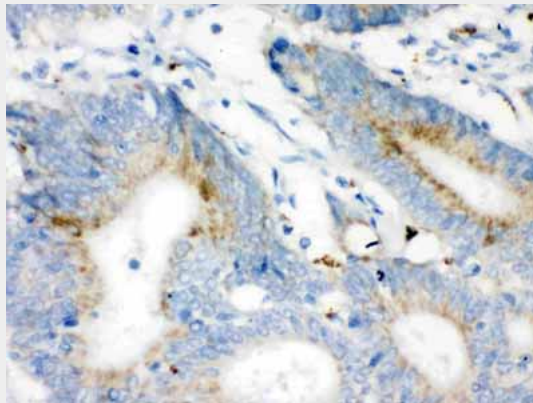
Anti-VDAC Picoband antibody, ABO12144, Western blottingAll lanes: Anti VDAC (ABO12144) at 0.5ug/mlLane 1: Rat Liver Tissue Lysate at 50ugLane 2: Mouse Liver Tissue Lysate at 50ugLane 3: SMMC Whole Cell Lysate at 40ugPredicted bind size: 31KDObserved bind size: 31KD



Anti-VDAC Picoband antibody, ABO12144, IHC(P)IHC(P): Mouse Cardiac Muscle Tissue



Anti-VDAC Picoband antibody, ABO12144, IHC(P)IHC(P): Rat Cardiac Muscle Tissue



Anti-VDAC Picoband antibody, ABO12144, IHC(P)IHC(P): Human Intestinal Cancer Tissue

#### **Anti-VDAC/Porin Picoband 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.