BOSTER BIOLOGICAL TECHNOLOGY
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Anti-VDAC/Porin/VDAC1 Antibody Picoband®

Catalog Number: PA1780

About VDAC1

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 though 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.

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Overview

Product Name	Anti-VDAC/Porin/VDAC1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-VDAC/Porin/VDAC1 Antibody catalog # PA1780. Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	Flow Cytometry, IF, IHC, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P21796

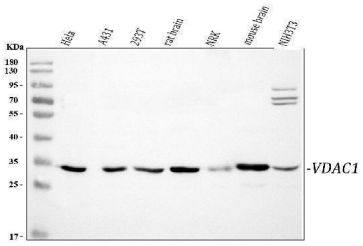
Technical Details

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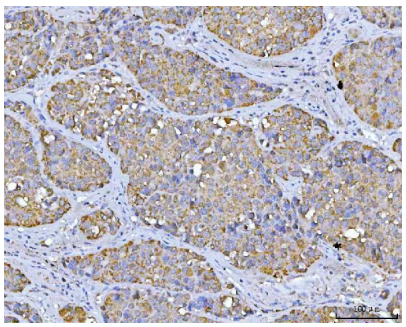
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human VDAC, identical to the related rat and mouse sequences.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for ICC.
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human Immunocytochemistry/Immunofluorescence, 5 ug/ml, Human Flow Cytometry (Fixed), 1-3 ug/1x10^6 cells, Human Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

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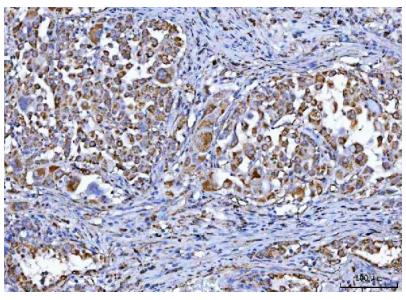
Anti-VDAC/Porin/VDAC1 Antibody Picoband® (PA1780) Images



Western blot analysis of VDAC/Porin/VDAC1 using anti-VDAC/Porin/VDAC1 antibody (PA1780). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human Hela whole cell lysates, Lane 2: human A431 whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: rat NRK whole cell lysates, Lane 6: mouse brain tissue lysates, Lane 7: mouse NIH/3T3 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-VDAC/Porin/VDAC1 antigen affinity purified polyclonal antibody (Catalog # PA1780) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for VDAC/Porin/VDAC1 at approximately 34 kDa. The expected band size for VDAC/Porin/VDAC1 is at 31 kDa.

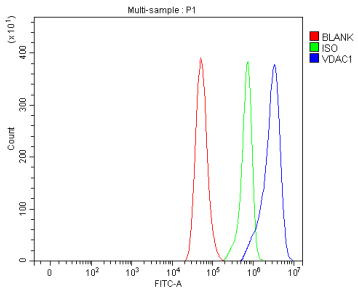


IHC analysis of VDAC/Porin/VDAC1 using anti-VDAC/Porin/VDAC1 antibody (PA1780). VDAC/Porin/VDAC1 was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-VDAC/Porin/VDAC1 Antibody (PA1780) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

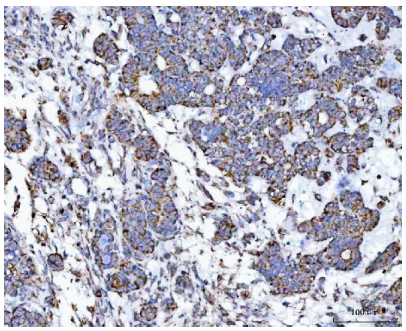


IHC analysis of VDAC/Porin/VDAC1 using anti-VDAC/Porin/VDAC1 antibody (PA1780). VDAC/Porin/VDAC1 was detected in a paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-VDAC/Porin/VDAC1 Antibody (PA1780) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

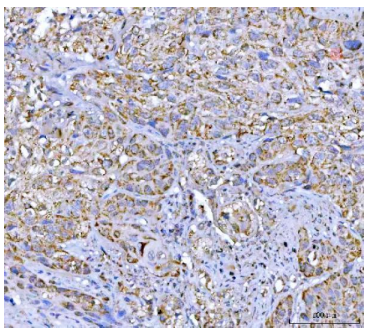
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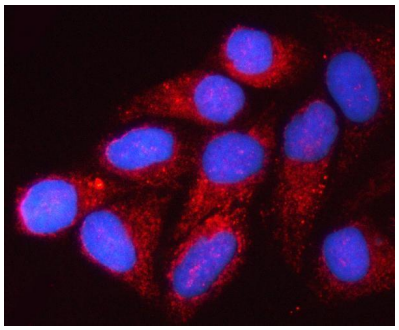
Flow Cytometry analysis of Hela cells using anti-VDAC/Porin/VDAC1 antibody (PA1780). Overlay histogram showing Hela cells stained with PA1780 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-VDAC/Porin/VDAC1 Antibody (PA1780, 1 ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10 ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



IHC analysis of VDAC/Porin/VDAC1 using anti-VDAC/Porin/VDAC1 antibody (PA1780). VDAC/Porin/VDAC1 was detected in a paraffin-embedded section of human ovarian cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-VDAC/Porin/VDAC1 Antibody (PA1780) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



IHC analysis of VDAC/Porin/VDAC1 using anti-VDAC/Porin/VDAC1 antibody (PA1780). VDAC/Porin/VDAC1 was detected in a paraffin-embedded section of human urothelial carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-VDAC/Porin/VDAC1 Antibody (PA1780) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



IF analysis of VDAC/Porin/VDAC1 using anti-VDAC/Porin/VDAC1 antibody (PA1780). VDAC/Porin/VDAC1 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/mL rabbit anti-VDAC/Porin/VDAC1 Antibody (PA1780) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

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6 Publications Citing This Product

1. PubMed ID: 10.1002/mnfr.201600576, Lack of beta, beta-carotene-9′, 10′-oxygenase 2 leads to hepatic mitochondrial dysfunction and cellular oxidative stress in mice

2. PubMed ID: 10.1002/elps.201700143, Novel chemiluminescent Western blot blocking and antibody incubation solution for enhanced antibody-antigen interaction and increased specificity

3. PubMed ID: 30085007, Song H,Telugu BP,Thompson LP.Sexual dimorphism of mitochondrial function in the hypoxic guinea pig placenta.Biol Reprod.2019 Jan 1;100(1):208-216.doi:10.1093/biolre/ioy167.PMID:30085007;PMCID:PMC6335207.

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Anti-VDAC/Porin/VDAC1 Antibody

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