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Product datasheet for TA329065

Vdac1 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	WB
Recommended Dilution:	WB: 1:200-1:2000
Reactivity:	Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)DGKNVNAGGHK, corresponding to amino acid residues of 264-274 of rat voltage dependent anion channel 1 (Accession Q9Z2L0). Intracellular.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN3.
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	voltage-dependent anion channel 1
Database Link:	NP_112643 Entrez Gene 22333 MouseEntrez Gene 83529 Rat Q9Z2L0

View online »

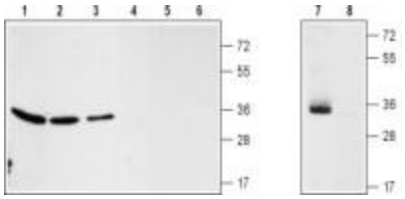
Background:

Voltage-dependent anion channel (VDAC) is an outer mitochondrial membrane channel protein expressed in a ubiquitous manner as it is required for proper mitochondrial function. The three isoforms expressed in higher eukaryotes are highly conserved. VDAC1, VDAC2 and VDAC3 allow the entry and exit of most metabolites in and out of the mitochondria. The channel spans the membrane 19 times through antiparallel b strands. Studies show that VDAC channels exhibit ion selectivity and are dependent on voltage. When in the open state, VDAC channels conduct mainly organic anions such as ATP, ADP and inorganic phosphate (Pi). In the closed state they still conduct ions, but much smaller and mostly inorganic like K+, Na+ and Ca2+ . However, while cells are metabolically active, VDAC channels are constitutively open in order to enable oxidative phosphorylation in the mitochondria to take place (through the passage of ADP across the membrane). VDAC channels are best described for their role in apoptosis. In the early stages of the signaling pathway, a proapoptotic factor, a member of the Bcl2 family is responsible for closing the channel thereby decreasing the release of ADP and ATP from the mitochondria. VDAC channels are also implicated in the Warburg effect, which is typical to cancer cell. In such cells, hexokinase (the first enzyme in the glycolytic pathway responsible for phosphorylating glucose on C6 to yield glucose-6 phosphate) known to be up-regulated, binds to VDAC1 and takes up most of the ATP released by the channel in order to phosphorylate glucose. This action speeds up glycolysis if downstream reactions function properly. If however a glycolysis step is inhibited or down-regulated, glucose-6-phosphate builds up and consequently inhibits hexokinase, thereby restoring proper mitochondrial function. VDAC is also detected in the plasma membrane of various cell types including lymphocytes, epithelial cells, and astrocytes. The postulated roles for VDAC in the plasma membrane mainly involve the regulation of cellular ATP release and volume control. VDAC have also been proposed to function as the plasma membrane maxi anion channels. None of the isoforms are essential for viability. Knock out of VDAC3 in mice causes sterility in males. That of VDAC1 and VDAC2 affects breathing and the individual knock out of VDAC1 causes embryonic death in mice in some cases.

Synonyms:

hVDAC1; MGC111064; OTTHUMP00000159381; OTTHUMP00000165946; PORIN; PORIN-31-HL; VDAC; VDAC-1

Product images:



Western blot analysis of rat kidney (lanes 1 and 4), brain (lanes 2 and 5) mouse brain (lanes 3 and 6) membrane and CCF-SSTGI (lanes 7 and 8) cell line lysate: 1-3, 7. Anti-Pan Voltage Dependent Anion Channels antibody, (1:200). 4-6, 8. Anti-Pan Voltage Dependent Anion Channels antibody, preincubated with the control peptide antigen.