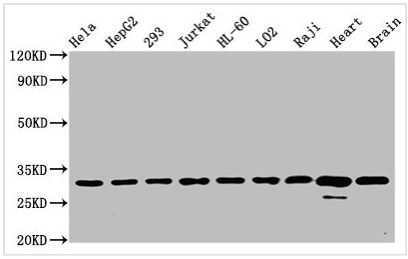
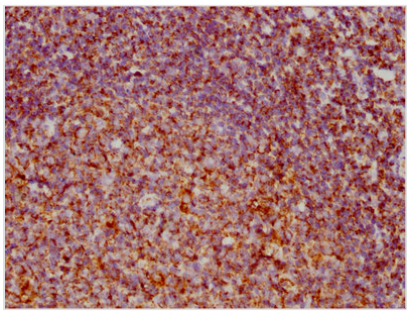
VDAC1 Recombinant Monoclonal Antibody

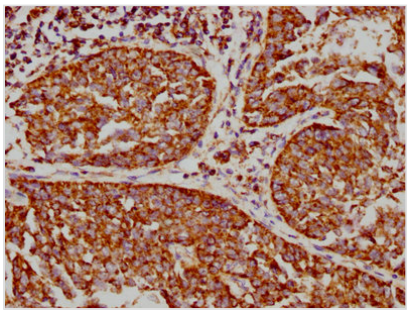
Product Code	CSB-RA025821A0HU
Abbreviation	Voltage-dependent anion-selective channel protein 1
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P21796
Immunogen	A synthesized peptide derived from human VDAC1
Species Reactivity	Human, Mouse, Rat
Tested Applications	ELISA, WB, IHC; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200
Relevance	Forms a channel through the mitochondrial outer membrane and also the plasma membrane. 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. It adopts an open conformation at low or zero membrane potential and a closed conformation at potentials above 30-40 mV. The open state has a weak anion selectivity whereas the closed state is cation-selective (PubMed:11845315, PubMed:18755977, PubMed:20230784, PubMed:8420959). May participate in the formation of the permeability transition pore complex (PTPC) responsible for the release of mitochondrial products that triggers apoptosis (PubMed:15033708, PubMed:25296756).
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Voltage-dependent anion-selective channel protein 1, VDAC-1, hVDAC1, Outer mitochondrial membrane protein porin 1, Plasmalemmal porin, Porin 31HL, Porin 31HM, VDAC1, VDAC
Immunogen Species	Homo sapiens (Human)
Research Area	Tags & Cell Markers
Gene Names	VDAC1
Clone No.	3A1
Image	



Western Blot
Positive WB detected in: Hela whole cell lysate, HepG2 whole cell lysate, 293 whole cell lysate, Jurkat whole cell lysate, HL-60 whole cell lysate, LO2 whole cell lysate, Raji whole cell lysate, Rat heart tissue, Mouse brain tissue
All lanes: VDAC1 antibody at 0.7μg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 31 KDa
Observed band size: 31 KDa



IHC image of CSB-RA025821A0HU diluted at 1:73.125 and staining in paraffin-embedded human tonsil tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.



IHC image of CSB-RA025821A0HU diluted at 1:73.125 and staining in paraffin-embedded human cervical cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.

Description

The preparation of the VDAC1 recombinant monoclonal antibody involves the utilization of DNA recombinant technology and in vitro genetic manipulation. The process initiates with the immunization of animals using a synthesized peptide derived from human VDAC1, followed by the isolation and selection of positive B cells. Single clone identification and screening of these positive B cells are performed. The light and heavy chains of the VDAC1 antibody are then amplified using PCR and inserted into a plasmid vector. This recombinant vector is subsequently transfected into a host cell line for antibody expression. The VDAC1 recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography. It exhibits strong reactivity with VDAC1 protein from human, mouse, and rat samples and is particularly suitable for ELISA, WB, and IHC applications.

The VDAC1 protein is a mitochondrial outer membrane protein that functions as a channel for the transport of small metabolites, ions, and signaling molecules between the cytosol and the mitochondrial intermembrane space. It is involved in the regulation of cellular metabolism, apoptosis, and autophagy. VDAC1 is essential for energy production in cells, as it facilitates the transport of ATP,

ADP, and other nucleotides across the mitochondrial membrane. It also plays a role in the regulation of mitochondrial permeability, which is important for the release of cytochrome c and other pro-apoptotic factors from the mitochondria during apoptosis. Additionally, VDAC1 has been implicated in the regulation of mitochondrial dynamics, mitochondrial biogenesis, and the response to oxidative stress.