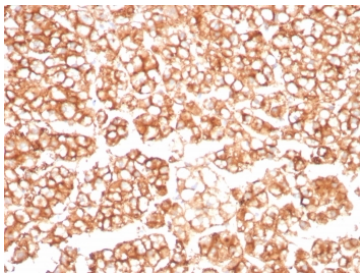
P-glycoprotein Antibody / MDR1 / ABCB1 [clone MDR1/8962R] (V5207)

Catalog No.	Formulation	Size
V5207-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5207-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5207SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MDR1/8962R
Purity	Protein A/G affinity
UniProt	P08183
Localization	Membrane
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This P-glycoprotein antibody is available for research use only.



Immunohistochemistry analysis of P-glycoprotein / MDR1 antibody in human adrenal gland. FFPE human adrenal gland tissue was stained with P-glycoprotein / MDR1 antibody (clone MDR1/8962R). HRP-DAB brown chromogenic signal is observed predominantly along the plasma membrane of adrenal cortical cells, producing a distinct membranous staining pattern consistent with the expected localization of the ABCB1 drug efflux transporter. Cortical cells display strong circumferential membrane staining, while surrounding stromal components show minimal background signal. Nuclei are counterstained blue. Heat-induced epitope retrieval was performed by boiling tissue sections in 10 mM Tris with 1 mM EDTA, pH 9, for 20 minutes followed by cooling prior to antibody incubation.

Description

P-glycoprotein antibody, also known as MDR1 antibody, recognizes an ATP-dependent transmembrane drug efflux transporter encoded by the ABCB1 gene. P-glycoprotein, formally named ATP-binding cassette sub-family B member 1, is a member of the ATP-binding cassette transporter superfamily and is predominantly localized to the plasma membrane. It is highly expressed in epithelial barrier tissues including the intestinal epithelium, hepatocytes at the canalicular membrane, renal proximal tubules, placental trophoblasts, and endothelial cells of the blood-brain barrier. In these locations, P-glycoprotein functions as a protective efflux pump that limits intracellular accumulation of xenobiotics and therapeutic agents.

P-glycoprotein plays a central role in multidrug resistance by actively transporting a broad spectrum of structurally diverse compounds out of cells using energy derived from ATP hydrolysis. Through this mechanism, MDR1 reduces intracellular concentrations of chemotherapeutic agents and contributes to resistance in multiple cancer types. P-glycoprotein antibody, also referred to as ABCB1 antibody and CD243 antibody in the literature, is widely used to investigate mechanisms of drug resistance, pharmacokinetics, and epithelial transport biology.

Structurally, P-glycoprotein contains two transmembrane domains that form the substrate translocation pathway and two cytoplasmic nucleotide-binding domains responsible for ATP binding and hydrolysis. ATP-driven conformational changes facilitate substrate extrusion across the plasma membrane. The protein is glycosylated and undergoes post-translational modifications that influence stability, trafficking, and membrane targeting. In polarized epithelial cells, P-glycoprotein is enriched at the apical membrane, where it mediates directional efflux into luminal compartments.

Elevated MDR1 expression is frequently observed in breast, ovarian, colorectal, and hematologic malignancies following chemotherapy exposure. Increased P-glycoprotein levels correlate with decreased drug retention and diminished therapeutic response. Beyond oncology, ABCB1 expression impacts blood-brain barrier permeability and systemic drug distribution. Recombinant monoclonal clone MDR1/8962R recognizes P-glycoprotein and is suitable for detecting MDR1 expression in relevant research applications.

Application Notes

Optimal dilution of the P-glycoprotein antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 500-700) from the human protein was used as the immunogen for the P-glycoprotein antibody.

Storage

Aliquot the P-glycoprotein antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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