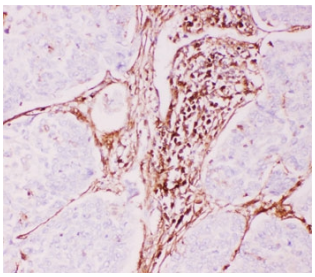
P Glycoprotein Antibody / MDR1 / Multidrug Resistance Protein 1 (R30136)

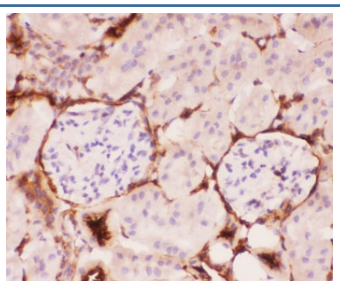
Catalog No.	Formulation	Size
R30136	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

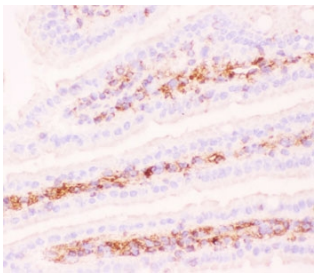
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide/thimerosal
Gene ID	5243
Applications	Immunohistochemistry (FFPE) : 0.5-1ug/ml Immunohistochemistry (Frozen) : 0.5-1ug/ml
Limitations	This P Glycoprotein antibody is available for research use only.



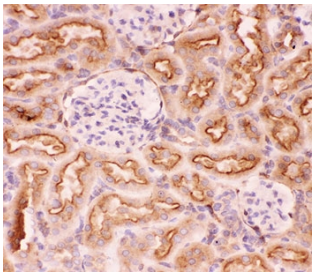
Immunohistochemistry analysis of P Glycoprotein (MDR1) expression. P Glycoprotein antibody staining was performed on formalin-fixed, paraffin-embedded human lung cancer tissue, showing membranous and cytoplasmic DAB signal in subsets of tumor-associated cells, with surrounding tumor regions largely negative. Heat-induced epitope retrieval was carried out by steaming sections in citrate buffer (pH 6.0) for 20 minutes, followed by detection using an HRP-conjugated secondary antibody and DAB chromogen.



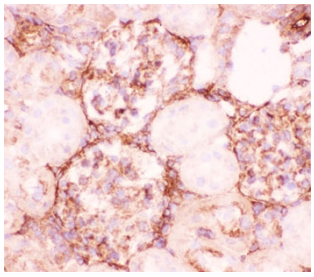
IHC-P: P Glycoprotein antibody testing of mouse kidney tissue. HIER: steam section in pH6 citrate buffer for 20 min.



IHC-F testing of mouse intestine tissue using P Glycoprotein antibody.



IHC-P: P Glycoprotein antibody testing of rat kidney tissue. HIER: steam section in pH6 citrate buffer for 20 min.



IHC-F testing of rat kidney tissue using P Glycoprotein antibody.

Description

P Glycoprotein antibody targets Multidrug Resistance Protein 1, also known as MDR1 and encoded by the ABCB1 gene. P Glycoprotein is a transmembrane ATP binding cassette transporter predominantly localized to the plasma membrane, where it functions as an energy dependent efflux pump for a wide range of structurally diverse substrates. High expression of P Glycoprotein is observed in barrier and excretory tissues such as intestinal epithelium, liver canalicular membranes, kidney proximal tubules, and the blood brain barrier, reflecting its essential role in xenobiotic transport and tissue protection.

Functionally, Multidrug Resistance Protein 1 actively exports drugs, metabolites, and toxic compounds out of cells, thereby limiting intracellular accumulation. A short functional summary is that MDR1 regulates drug disposition and cellular exposure by pumping substrates across membranes using ATP hydrolysis. This activity has major implications for pharmacokinetics, drug bioavailability, and tissue specific drug resistance, particularly in cancer cells exposed to chemotherapeutic agents.

At the molecular level, P Glycoprotein contains two transmembrane domains that form the substrate translocation pathway and two cytoplasmic nucleotide binding domains that drive transport through ATP binding and hydrolysis. Conformational cycling between inward facing and outward facing states enables broad substrate specificity. P Glycoprotein antibody reagents are widely used to examine transporter expression, membrane localization, and regulation in both normal tissues and experimental model systems.

From a disease relevance perspective, MDR1 expression is strongly associated with multidrug resistance in cancer, where overexpression of P Glycoprotein reduces intracellular concentrations of chemotherapeutic drugs and contributes to treatment failure. Altered ABCB1 expression has also been implicated in neurological disorders, inflammatory disease, and variability in drug response. P Glycoprotein antibody tools are therefore central to studies of cancer biology, pharmacology, toxicology, and transporter mediated drug resistance.

Developmentally and physiologically, P Glycoprotein expression is tightly regulated to protect sensitive tissues from harmful compounds while facilitating drug clearance. Changes in MDR1 expression can occur in response to environmental stress, drug exposure, and pathological states. P Glycoprotein antibodies from NSJ Bioreagents are supplied for research use to support investigations of transporter biology, drug resistance mechanisms, and tissue barrier function.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the P Glycoprotein antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

Amino acids IYFKLVTMQTAGNEVELENAADESKSEIDA were used as the immunogen for this P Glycoprotein antibody.

Storage

After reconstitution, the P Glycoprotein antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.