

## P-glycoprotein1 (MDR1, ABCB1)

Cat.No. 473 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

|                            |                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reconstitution/<br>Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For <b>reconstitution</b> add 50 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet. |
| Applications               | <b>WB:</b> 1 : 500 up to 1 : 1000 (AP staining)<br><b>IP:</b> not tested yet<br><b>ICC:</b> not tested yet<br><b>IHC:</b> not recommended<br><b>IHC-P:</b> not tested yet<br><b>IHC-Fr:</b> 1 : 500 up to 1 : 1000                                                                                                                                                                                     |
| Immunogen                  | Recombinant protein corresponding to residues near the carboxy terminus of mouse P-glycoprotein 1. (UniProt Id: P06795)                                                                                                                                                                                                                                                                                |
| Reactivity                 | Reacts with: mouse (P06795), rat (P43245).<br>Other species not tested yet.                                                                                                                                                                                                                                                                                                                            |
| Remarks                    | <b>WB:</b> To avoid protein aggregation, do not heat samples for SDS-PAGE.<br><b>IHC-Fr:</b> 4% formaldehyde/PFA fixation is recommended.                                                                                                                                                                                                                                                              |

**TO BE USED IN VITRO / FOR RESEARCH ONLY**  
**NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS**

### Background

P-glycoprotein (Pgp) is a member of the ATP-binding cassette (ABC) superfamily of transport proteins that utilize ATP to translocate a variety of lipophilic substrates across biological membranes. (1) Pgp is encoded for by a family of genes referred to as the multidrug resistance or MDR genes [2, 3] whose products function as multidrug efflux pumps [3, 4].

P-glycoprotein (Pgp) is one of the proteins expressed naturally on the plasmatic membranes of endothelial cells at the blood-brain barrier (BBB). It protects the brain from harmful substances by excluding them from entering into the parenchyma from blood circulation. It is one of several so-called efflux pumps present at the BBB and in other organs. Overexpression of this protein excludes a wide range of therapeutics for use as treatment for Central Nervous System (CNS) disorders. (5)

### Selected General References

ABC transporters: from microorganisms to man.  
Higgins CF et al. Annu Rev Cell Biol (1992) PubMed:1282354

Effects on P-Glycoprotein Expression after Blood-Brain Barrier Disruption Using Focused Ultrasound and Microbubbles.  
Aryal M et al. PLoS One (2017) PubMed:28045902

P-glycoproteins and multidrug resistance.  
Bellamy WT et al. Annu Rev Pharmacol Toxicol (1996) PubMed:8725386

Function and regulation of the human multidrug resistance gene.  
Chin KV et al. Adv Cancer Res (1993) PubMed:8417499

Biochemistry of multidrug resistance mediated by the multidrug transporter.  
Gottesman MM et al. Annu Rev Biochem (1993) PubMed:8102521

Access the online factsheet including applicable protocols  
at <https://sysy.com/product/473005> or scan the QR-code.



## FAQ - How should I store my antibody?

### Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

### Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

### Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

### Product Specific Hints for Storage

#### Control proteins / peptides

- Store at -20°C to -80°C.

#### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

## Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.