

von Willebrand factor (vWF)

Cat.No. 527 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For reconstitution add 50 µl H ₂ 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	WB: not recommended (see remarks) IP: not tested yet ICC: 1 : 500 up to 1 : 1000 (see remarks) IHC: 1 : 500 up to 1 : 2000 (see remarks) IHC-P: not recommended IHC-Fr: 1 : 1000 (see remarks) IHC-G: 1 : 1000 (see remarks)
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of mouse von Willebrand factor (UniProt Id: Q8CIZ8)
Reactivity	Reacts with: mouse (Q8CIZ8), rat (A0A8J8XVZ5). Other species not tested yet.
Specificity	Does not recognize von Willebrand antigen 2
Remarks	WB: Cat. no. 527 015 is recommended for this application. ICC: Methanol fixation is recommended. IHC: Heat-mediated antigen retrieval (citrate buffer pH 6) is required for immunohistochemical staining. IHC-Fr: Acetone, methanol-acetone (1:1 mix) or formaldehyde fixation are recommended. IHC-G: 3% glyoxal, 1% acetic acid, 20% ethanol, in ddH ₂ O, pH 4.2-4.4, according to Richter et al. 2017 is recommended.

Background

von Willebrand factor (vWF) is a key glycoprotein primarily expressed in endothelial cells and stored in Weibel-Palade bodies, playing a vital role in hemostasis and vascular biology (1). It is also present in platelets and the subendothelial matrix, contributing to thrombosis and inflammation (2). vWF expression is heterogeneous in different tissues, for example, in the kidney, its expression varies among glomerular endothelial cells, affecting susceptibility to complement-mediated injury in atypical hemolytic uremic syndrome (aHUS) (2). In the brain, vWF is abundant in endothelial cells and contributes to blood-brain barrier regulation, affecting permeability under hypoxia and seizures (3). Disease associations include von Willebrand disease (vWD), thrombotic thrombocytopenic purpura (TTP), and cardiovascular disorders. In vWD, impaired vWF leads to bleeding tendencies, while excessive vWF activity in TTP causes microvascular thrombosis (2). Additionally, vWF modulates angiogenesis by regulating endothelial cell proliferation and migration (1).

Selected General References

Endothelial von Willebrand factor regulates angiogenesis.
Starke RD et al. Blood (2011) PubMed:21048155

Von Willebrand factor regulates complement on endothelial cells.
Noone DG et al. Kidney Int (2016) PubMed:27236750

Endothelial Von Willebrand factor promotes blood-brain barrier flexibility and provides protection from hypoxia and seizures in mice.
Suidan GL et al. Arterioscler Thromb Vasc Biol (2013) PubMed:23825365

Access the online factsheet including applicable protocols at <https://sysy.com/product/527005> or scan the QR-code.



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

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 a 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.