

## Caveolin1

Cat.No. 161 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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 : 1000 (AP staining) <b>IP:</b> yes <b>ICC:</b> 1 : 100 up to 1 : 500 <b>IHC:</b> not recommended <b>IHC-P:</b> not tested yet <b>IHC-Fr:</b> 1 : 500 (see remarks) <b>IHC-G:</b> 1 : 500 up to 1 : 1000 (see remarks)
Immunogen	Synthetic peptide corresponding to AA 1 to 17 from rat Caveolin1 (UniProt Id: P41350)
Reactivity	Reacts with: human (Q03135), rat (P41350), mouse (P49817), dog, pig, cow, monkey. No signal: zebrafish. Other species not tested yet.
Matching control	161-OP
Remarks	<b>IHC-Fr:</b> MeOH fixation is recommended. <b>IHC-G:</b> Fixation with 3% glyoxal, 1% acetic acid, 20% ethanol in ddH <sub>2</sub> O according to <a href="#">Richter et al. 2017</a> , or 9% glyoxal, 8% acetic acid in ddH <sub>2</sub> O according to <a href="#">Konno et al. 2023</a> are possible. is recommended.

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

## Background

Caveolae are distinct flask shaped invaginations which contain high concentrations of cholesterol and sphingolipids. These subcellular compartments can be found at the surface of many cell types. Three isoforms (**Calveolin 1**, 2, 3) have been described so far. Caveolin 1 is the major coat protein of endothelial caveolae and a knock out of this protein leads to a complete loss of these cell surface structures in various cell types.

Caveolin 1 is also expressed in brain where it localizes to astrocytes, oligodendrocytes and endothelial cells but seems to be absent from neurons. Very recently a correlation of increased caveolin 1 expression in brain and Alzheimer's disease has been described.

## Selected References for 161 003

Spatial proteomics in neurons at single-protein resolution.  
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.  
Cell (2024) 1877: 1785-1800.e16. . **DNA\_PAINT; tested species: rat**

Involvement of the Cdc42 pathway in CFTR post-translational turnover and in its plasma membrane stability in airway epithelial cells.

Ferru-Clément R, Fresquet F, Norez C, Métayé T, Becq F, Kitzis A, Thoreau V  
PloS one (2015) 103: e0118943. . **WB**

## Selected General References

Caveolin-1 upregulation in senescent neurons alters amyloid precursor protein processing.  
Kang MJ, Chung YH, Hwang CI, Murata M, Fujimoto T, Mook-Jung IH, Cha CI, Park WY  
Experimental & molecular medicine (2006) 382: 126-33. .

Increased caveolin-1 expression in Alzheimer's disease brain.  
Gaudreault SB, Dea D, Poirier J  
Neurobiology of aging (2004) 256: 753-9. .

Expression of caveolin-1 in human brain microvessels.  
Virgintino D, Robertson D, Errede M, Benagiano V, Tauer U, Roncali L, Bertossi M  
Neuroscience (2002) 1151: 145-52. .

Affinity-purification and characterization of caveolins from the brain: differential expression of caveolin-1, -2, and -3 in brain endothelial and astroglial cell types.  
Ikezu T, Ueda H, Trapp BD, Nishiyama K, Sha JF, Volonte D, Galbiati F, Byrd AL, Bassell G, Serizawa H, Lane WS, et al.  
Brain research (1998) 8042: 177-92. .

Identification of caveolin and caveolin-related proteins in the brain.  
Cameron PL, Ruffin JW, Bollag R, Rasmussen H, Cameron RS  
The Journal of neuroscience : the official journal of the Society for Neuroscience (1997) 1724: 9520-35. .

Caveolin, a protein component of caveolae membrane coats.  
Rothberg KG, Heuser JE, Donzell WC, Ying YS, Glenney JR, Anderson RG  
Cell (1992) 684: 673-82. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/161003> 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 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.