SYSY Antibodies

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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 **reconstitution** add 50 µl H_2O 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**: 1 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 100 up to 1 : 500 **IHC**: 1 : 500 up to 1 : 1000 (see remarks) **IHC-P**: 1 : 1000 **IHC-Fr**: 1 : 500 (see remarks) **IHC-G**: 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	161-0P
Remarks	**IHC**: Antigen retrieval with Tris-EDTA buffer pH 9 is required. **IHC-Fr**: Methanol fixation is recommended. **IHC-G**: The following fixatives are possible: 3% glyoxal, 9% glyoxal.

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. The primary structural proteins of caveolae are caveolins, a family comprising three members: caveolin1, caveolin2, and caveolin3. Caveolin1 exists in two isoforms, caveolin1α and caveolin1β, which differ in their N-terminal sequences. Caveolin1 is ubiquitously expressed in all cell types and is the predominant coat protein of endothelial caveolae. Caveolin1 is essential in multiple cellular processes, including membrane trafficking, cholesterol homeostasis, signal transduction, and cellular communication (1). Knockout studies have demonstrated that the absence of caveolin1 leads to a complete loss of caveolae structures in various cell types, underscoring its essential role in caveolae formation (2). Its dysregulation has been implicated in cardiovascular diseases, neurodegenerative disorders, metabolic diseases, and cancer (3). Caveolin1 plays a complex role in glioblastoma (GBM), the most aggressive primary brain tumor. Its function in GBM appears to be context-dependent, exhibiting both tumor-promoting and tumor-suppressing activities (4).

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

The caveolin proteins.
Williams TM et al. Genome Biol (2004) PubMed:15003112

Caveolin-1, a Key Mediator Across Multiple Pathways in Glioblastoma and an Independent Negative Biomarker of Patient Survival.
Moriconi C et al. Front Oncol (2021) PubMed:34490102

Caveolin-1 in the regulation of cell metabolism: a cancer perspective.
Nwosu ZC et al. Mol Cancer (2016) PubMed:27852311

The biology of caveolae: lessons from caveolin knockout mice and implications for human disease.
Hnasko R et al. Mol Interv (2003) PubMed:14993453

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.