

## SUMO1

Cat.No. 268-0P; control peptide, 100 µg peptide (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For <b>reconstitution</b> add 100 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. Control peptides should be stored at -20°C when still lyophilized! For detailed information, see back of the data sheet.
Immunogen	Synthetic peptide corresponding to AA 57 to 70 from mouse SUMO1 (UniProt Id: P63166)
Recommended dilution	Optimal concentrations should be determined by the end-user.
Matching antibodies	268 003
Remarks	This control peptide consists of the synthetic peptide (aa 57-70 of mouse SUMO 1) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

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

### Background

The **Small ubiquitin-related modifiers SUMOs** are ubiquitin-like proteins (UBLs) that can be conjugated to other proteins in a manner analogous to ubiquitin. Four SUMO paralogs, **SUMO 1-4** have been described in mammals. SUMO 1 is also referred to as GMP 1, Setrin 1, SMT3C and SMT3H3. Modification of proteins with SUMO 1 or other SUMOs requires a unique activating enzyme complex as well as a conjugation enzyme. This process plays an important role in a wide variety of processes such as transcriptional regulation, maintenance of genome integrity and subcellular localization. Sumoylated proteins include PML, Sp100, IκBα, RanGAP1 and RANBP2. The unmodified 70 kDa form of RanGAP1 is exclusively cytoplasmic, whereas the 90 kDa sumoylated form is associated with the cytoplasmic fibers of nuclear pore complexes (NPCs).

### Selected General References

Small ubiquitin-related modifier paralogs are indispensable but functionally redundant during early development of zebrafish. Yuan H, Zhou J, Deng M, Liu X, Le Bras M, de The H, Chen SJ, Chen Z, Liu TX, Zhu J Cell research (2010) 202: 185-96. .

The polycomb repressive complex 2 is a potential target of SUMO modifications. Riising EM, Boggio R, Chiocca S, Helin K, Pasini D PLoS one (2008) 37: e2704. .

Small ubiquitin-related modifier (SUMO)-1, SUMO-2/3 and SUMOylation are involved with centromeric heterochromatin of chromosomes 9 and 1 and proteins of the synaptonemal complex during meiosis in men. Brown PW, Hwang K, Schlegel PN, Morris PL Human reproduction (Oxford, England) (2008) 2312: 2850-7. .

SUMOylation of the polyglutamine repeat protein, ataxin-1, is dependent on a functional nuclear localization signal. Riley BE, Zoghbi HY, Orr HT The Journal of biological chemistry (2005) 28023: 21942-8. .

Perturbation of SUMOylation enzyme Ubc9 by distinct domain within nucleoporin RanBP2/Nup358. Saitoh H, Pizzi MD, Wang J The Journal of biological chemistry (2002) 2777: 4755-63. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/268-0P> 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.