

## Desmin

Cat.No. **HS-511 008**; Monoclonal rabbit antibody, 50 µg recombinant IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	50 µg purified recombinant IgG, lyophilized. 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 : 1000 (AP-staining) <b>IP:</b> not tested yet <b>ICC:</b> not tested yet <b>IHC:</b> 1 : 500 <b>IHC-P:</b> 1 : 1000 up to 1 : 4000
Clone	RbDeu10
Subtype	IgG1 (κ light chain)
Immunogen	Purified porcine Desmin (UniProt Id: P02540)
Reactivity	Reacts with: mouse (P31001), human (P17661), rat (P48675). Other species not tested yet.
Remarks	This antibody is a chimeric antibody based on the monoclonal mouse antibody DE-U-10. The constant regions of the heavy and light chains have been replaced by rabbit specific sequences. The antibody can therefore be used with standard anti-rabbit secondary reagents. The antibody has been expressed in mammalian cells.

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

## Background

Desmin is the most important muscular intermediate filament (IF) and is expressed in cardiac, skeletal and smooth muscles. Desmin IFs envelop myofibrils at the level of Z-disks and extend from the nuclear envelope to the sarcolemma and various organelles such as nuclei, mitochondria, and the sarcoplasmic reticulum (1). In this way, desmin IFs contribute to structural and mechanical support, cellular integrity, force transmission, and mitochondrial homeostasis (1). Desmin knockout-mice develop normally and are fertile. However, after birth mice develop cardiovascular lesions and skeletal myopathy (2). Studies in these mice suggest that desmin is not required for myogenic commitment, differentiation or fusion, but is essential for maintaining the tensile strength and integrity of muscle fibers (3). In humans, missense mutations in the desmin gene (DES) also cause a distinct "desmin myopathy", which is often associated with cardiomyopathy (4).

## Selected General References

New roles for desmin in the maintenance of muscle homeostasis.  
Agnetti G, Herrmann H, Cohen S  
The FEBS journal (2022) 28910: 2755-2770. .

Desmin myopathy, a skeletal myopathy with cardiomyopathy caused by mutations in the desmin gene.  
Dalakas MC, Park KY, Semino-Mora C, Lee HS, Sivakumar K, Goldfarb LG  
The New England journal of medicine (2000) 34211: 770-80. .

Desmin is essential for the tensile strength and integrity of myofibrils but not for myogenic commitment, differentiation, and fusion of skeletal muscle.  
Li Z, Mericskay M, Agbulut O, Butler-Browne G, Carlsson L, Thornell LE, Babinet C, Paulin D  
The Journal of cell biology (1997) 1391: 129-44. .

Cardiovascular lesions and skeletal myopathy in mice lacking desmin.  
Li Z, Colucci-Guyon E, Pinçon-Raymond M, Mericskay M, Pournin S, Paulin D, Babinet C  
Developmental biology (1996) 1752: 362-6. .

Access the online factsheet including applicable protocols at <https://susy-histosure.com/product/HS-511008> 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.