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Desmin

Cat.No. HS-511 008; Recombinant 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 **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**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 **IHC-P**: 1 : 1000 up to 1 : 4000 **IHC-Fr**: 1 : 500 (see remarks)
Clone	RbDeu10
Subtype	IgG1 (κ light chain)
Immunogen	Purified porcine Desmin (UniProt Id: P02540)
Reactivity	Reacts with: mouse (P31001), human (P17661), rat (P48675), pig (P02540). 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 The constant regions of the heavy and light chains have been replaced by rabbit specific sequences.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. **IHC-Fr**: The following fixatives are possible: 4% formaldehyde/PFA, acetone.

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 et al. FEBS J (2022) PubMed:33825342

Desmin myopathy, a skeletal myopathy with cardiomyopathy caused by mutations in the desmin gene.
Dalakas MC et al. N Engl J Med (2000) PubMed:10717012

Desmin is essential for the tensile strength and integrity of myofibrils but not for myogenic commitment, differentiation, and fusion of skeletal muscle.
Li Z et al. J Cell Biol (1997) PubMed:9314534

Cardiovascular lesions and skeletal myopathy in mice lacking desmin.
Li Z et al. Dev Biol (1996) PubMed:8626040

Access the online factsheet including applicable protocols at https://sysy-histosure.com/product/HS-511008 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.