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RAGE

Cat.No. 549 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. 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 (fluorescent detection) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 400
Immunogen	Synthetic peptide corresponding to residues surrounding AA50 of mouse RAGE (UniProt Id: Q62151)
Reactivity	Reacts with: mouse (Q62151), rat (Q63495), human (Q15109). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required.

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

Background

The receptor for advanced glycation end products (RAGE) is a multiligand pattern-recognition receptor composed of extracellular V-, C1-, and C2-type immunoglobulin domains, a single transmembrane region, and a cytoplasmic tail that is essential for intracellular signal transduction (1). RAGE interacts with a broad spectrum of ligands, including advanced glycation end products (AGEs), S100/calgranulin proteins, and high-mobility group box 1 (HMGB1), thereby functioning as a potent amplifier of inflammatory signaling across multiple tissues (1,2). In addition, RAGE exists in soluble forms (sRAGE) that lack transmembrane and cytoplasmic domains and can competitively bind RAGE ligands, acting as decoy receptors that modulate RAGE-dependent signaling (1). Under physiological conditions, RAGE expression is low in most adult tissues, with the notable exception of the lung, where it is abundantly expressed on alveolar epithelial cells and alveolar macrophages (3,4). In the context of acute lung injury, RAGE plays a central role in mediating inflammatory responses, and therapeutic blockade of RAGE after injury has been shown to significantly attenuate inflammation and tissue damage in experimental models (4). Beyond pulmonary pathology, aberrant activation of RAGE and sustained engagement by its ligands have been implicated in a wide range of inflammatory and degenerative diseases, including diabetes, Alzheimer's and Parkinson's disease, multiple sclerosis, stroke, and various forms of cancer (5).

Selected General References

Receptor for Advanced Glycation End Products (RAGE): A Pivotal Hub in Immune Diseases.
Yue Q et al. Molecules (2022) PubMed:35956875

Blocking RAGE expression after injury reduces inflammation in mouse model of acute lung injury.
Johnson LL et al. Respir Res (2023) PubMed:36670409

Pathophysiology of RAGE in inflammatory diseases.
Dong H et al. Front Immunol (2022) PubMed:35967420

Cellular signalling of the receptor for advanced glycation end products (RAGE).
Xie J et al. Cell Signal (2013) PubMed:23838007

The receptor for advanced glycation end products (RAGE) and the lung.
Buckley ST et al. J Biomed Biotechnol (2010) PubMed:20145712

Access the online factsheet including applicable protocols at https://sysy.com/product/549003 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.