SYSY Antibodies

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LRBA

Cat.No. 524 003; 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 up to 1 : 5000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 2000 **IHC**: 1 : 2000 **IHC-P**: 1 : 1000
Immunogen	Recombinant protein corresponding to residues near the central region of mouse LRBA (UniProt Id: Q9ESE1)
Reactivity	Reacts with: mouse (Q9ESE1). Other species not tested yet.
Specificity	K.O. validated PubMed: 28814779
Remarks	**WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE. Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE.

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

Background

LRBA (Lipopolysaccharide-Responsive and Beige-Like Anchor Protein) is a member of the BEACH-protein family. It is a large cytosolic protein comprising several functional domains, including the Plekstrin Homology (PH)-like domain, BEACH domain, and multiple WD40 repeats (1).
LRBA is essential for the proper functioning of immune cells, particularly B cells and T cells. It has been shown to regulate the recycling of the immune receptor CTLA-4, which is crucial for T cell activation and downregulation (2, 3). LRBA deficiency manifests as immunodeficiency, autoimmune diseases, and various hematological disorders, like reduced levels of B cells, impaired immunoglobulin production and more (4).
Dysfunctional LRBA is also connected to several CNS disorders like sensorineural hearing loss (5), cerebral granulomatous lesions, nerve demyelination and atrophy (6).
LRBA is widely expressed in multiple tissues including lymphoid organs, the gastrointestinal tract, kidney, the pancreas, and neuronal cells (7).

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 524 003

The BEACH Protein LRBA Promotes the Localization of the Heterotrimeric G-protein Golf to Olfactory Cilia.
Kurtenbach S, Gießl A, Strömberg S, Kremers J, Atorf J, Rasche S, Neuhaus EM, Hervé D, Brandstätter JH, Asan E, Hatt H, et al.
Scientific reports (2017) 71: 8409. . **WB, ICC, IHC; KO verified; tested species: mouse**

LRBA, a BEACH protein mutated in human immune deficiency, is widely expressed in epithelia, exocrine and endocrine glands, and neurons.
Roussa E, Juda P, Laue M, Mai-Kolerus O, Meyerhof W, Sjöblom M, Nikolovska K, Seidler U, Kilimann MW
Scientific reports (2024) 141: 10678. . **IHC; KO verified; tested species: mouse**

Selected General References

The BEACH is hot: a LYST of emerging roles for BEACH-domain containing proteins in human disease.
Cullinane AR et al. Traffic (2013) PubMed:23521701

LRBA, a BEACH protein mutated in human immune deficiency, is widely expressed in epithelia, exocrine and endocrine glands, and neurons.
Roussa E et al. Sci Rep (2024) PubMed:38724551

Central nervous system manifestations of LRBA deficiency: case report of two siblings and literature review.
Mangodt TC et al. BMC Pediatr (2023) PubMed:37443020

Murine LRBA deficiency causes CTLA-4 deficiency in Tregs without progression to immune dysregulation.
Burnett DL et al. Immunol Cell Biol (2017) PubMed:28611475

The BEACH protein LRBA is required for hair bundle maintenance in cochlear hair cells and for hearing.
Vogl C et al. EMBO Rep (2017) PubMed:28893864

Spectrum of Phenotypes Associated with Mutations in LRBA.
Alkhairy OK et al. J Clin Immunol (2016) PubMed:26707784

AUTOIMMUNE DISEASE. Patients with LRBA deficiency show CTLA4 loss and immune dysregulation responsive to abatacept therapy.
Lo B et al. Science (2015) PubMed:26206937

Access the online factsheet including applicable protocols at https://sysy.com/product/524003 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.