SYSY Antibodies

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GLP-1

Cat.No. 471 005; Polyclonal Guinea pig 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**: not tested yet **Dot blot**: 1 : 1000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 1000 up to 1 : 2000
Immunogen	Synthetic peptide comprising almost all of the processed mouse GLP-1(7-36)amide. (UniProt Id: P55095)
Reactivity	Reacts with: mouse (P55095), rat (P06883). Other species not tested yet.
Specificity	The antibody recognizes GLP-1 with a preference for the amidated GLP-1(7-36)amide. It may show some cross-reactivity with the unprocessed precursor protein.
Remarks	**Dot blot**: This application was tested with synthetic peptides only.

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

Background

Glucagon-like peptide-1 (GLP-1) is a member of the glucagon family of hormones.
The well conserved peptide is generated by tissue-specific posttranslational processing of the proglucagon precursor, yielding the amidated GLP-1(7-36)amide or the non-amidated GLP-1(7-37) (1).
In humans and mice, GLP-1 is predominantly amidated, whereas in rats both amidated and nonamidated GLP-1 is present (1,2). Both forms are biologically active and rapidly inactivated by proteolytic cleavage (1,3).
GLP-1 is produced and secreted by intestinal enteroendocrine L-cells and certain neurons within the nucleus of the solitary tract in the brainstem in response to nutrient ingestion (1). Although there is some species variation, the density of L-cells increases distally along the gut, with greatest density in the ileum and colon (1,2).
GLP-1 exerts its effects via interaction with its specific G-protein-coupled receptor GLP-1R. Receptor binding stimulates insulin secretion from pancreatic beta cells.
In addition to its insulinotropic effects, GLP-1 promotes beta cell proliferation, it is involved in gastrointestinal motility, and it inhibits gastric emptying. In bone, GLP-1 inhibits bone resorption. In the brain, GLP-1 is thought to be involved in memory formation as well as in the control of appetite (1,3).
The numerous beneficial effects of GLP-1 render this hormone an interesting candidate for the development of pharmacotherapies to treat obesity and diabetes (4,5).

Selected General References

Glucagon-like peptide 1 (GLP-1).
Müller TD et al. Mol Metab (2019) PubMed:31767182

Small-molecule GLP-1 secretagogs: challenges and recent advances.
He J et al. Drug Discov Today (2020) PubMed:32835725

Pharmacological Actions of Glucagon-Like Peptide-1, Gastric Inhibitory Polypeptide, and Glucagon.
Sekar R et al. Int Rev Cell Mol Biol (2016) PubMed:27572131

GLP-1 amidation efficiency along the length of the intestine in mice, rats and pigs and in GLP-1 secreting cell lines.
Kuhre RE et al. Peptides (2014) PubMed:24486427

GIP and GLP-1, the two incretin hormones: Similarities and differences.
Seino Y et al. J Diabetes Investig (2010) PubMed:24843404

Access the online factsheet including applicable protocols at https://sysy.com/product/471005 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.