

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 ₂ 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	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: 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 secretagogues: 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 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.