SYSY Antibodies

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GIP

Cat.No. 514 003; 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**: not tested yet **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 up to 1 : 2000 **IHC-P (FFPE)**: 1 : 1000 up to 1 : 4000
Immunogen	Synthetic peptide corresponding to AA 58 to 85 from mouse GIP (UniProt Id: P48756)
Reactivity	Reacts with: mouse (P48756), rat (Q06145). Other species not tested yet.
Specificity	The antibody is specific for GIP. It may show minor cross-reactivity to related peptide hormones.

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

Background

Gastric inhibitory polypeptide (**GIP**), also known as **glucose-dependent insulinotropic polypeptide**, is a member of the secretin/glucagon superfamily of peptides. It is a well conserved 42 amino acid peptide generated by post-translational cleavage of the precursor protein proGIP (1).
GIP is synthesized by enteroendocrine K cells of the small intestine, found in highest concentration in the duodenum. It is released into the circulation in response to glucose or fat ingestion (1). A short but bioactive form of GIP (GIP1-30) is secreted from pancreatic alpha-cells within the pancreatic islets (2). In the CNS, GIP is expressed in several brain regions including the cerebral cortex, hippocampus, and olfactory bulb (3).
GIP exerts its effects via interaction with its G-protein-coupled receptor. In pancreatic beta-cells, it increases adenylyl cyclase activity, thereby stimulating insulin secretion (1,2). GIP is also implicated in the control of lipid metabolism and the development of obesity. In adipose tissue, it increases lipoprotein lipase activity and lipogenesis (1,4). Recently, GIP appeared as a major player in bone metabolism and bone cell physiology by preserving bone strength (4,5). In the brain, GIP induces neuronal progenitor cell proliferation and has a neuroprotective function (3).

Selected General References

Glucose-dependent insulinotropic polypeptide (Gastric Inhibitory Polypeptide; GIP).
McIntosh CH et al. Vitam Horm (2009) PubMed:19251046

GIP has neuroprotective effects in Alzheimer and Parkinson's disease models.
Zhang ZQ et al. Peptides (2020) PubMed:31705913

Recent advances of GIP and future horizons.
Holst JJ et al. Peptides (2020) PubMed:31838219

GIP and the gut-bone axis - Physiological, pathophysiological and potential therapeutic implications.
Stensen S et al. Peptides (2020) PubMed:31715213

Glucose-dependent insulinotropic polypeptide is expressed in pancreatic islet alpha-cells and promotes insulin secretion.
Fujita Y et al. Gastroenterology (2010) PubMed:20138041

Access the online factsheet including applicable protocols at https://sysy.com/product/514003 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.