

## 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 <b>reconstitution</b> add 50 µl H <sub>2</sub> 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	<b>WB:</b> not tested yet <b>IP:</b> not tested yet <b>ICC:</b> not tested yet <b>IHC:</b> 1 : 500 up to 1 : 2000 <b>IHC-P:</b> 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, Widenmaier S, Kim SJ  
Vitamins and hormones (2009) 80: 409-71. .

GIP has neuroprotective effects in Alzheimer and Parkinson's disease models.  
Zhang ZQ, Hölscher C  
Peptides (2020) 125: 170184. .

Recent advances of GIP and future horizons.  
Holst JJ, Rosenkilde MM  
Peptides (2020) 125: 170230. .

GIP and the gut-bone axis - Physiological, pathophysiological and potential therapeutic implications.  
Stensen S, Gasbjerg LS, Helsted MM, Hartmann B, Christensen MB, Knop FK  
Peptides (2020) 125: 170197. .

Glucose-dependent insulinotropic polypeptide is expressed in pancreatic islet alpha-cells and promotes insulin secretion.  
Fujita Y, Wideman RD, Asadi A, Yang GK, Baker R, Webber T, Zhang T, Wang R, Ao Z, Warnock GL, Kwok YN, et al.  
Gastroenterology (2010) 1385: 1966-75. .

Access the online factsheet including applicable protocols at <https://sysis.com/product/514003> 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.