

# GIF (N-12): sc-161645

## BACKGROUND

Vitamin B12, also known as cobalamin, is a water-soluble vitamin that is required for formation of red blood cells and for normal functioning of the nervous system. Used to regenerate folate concentrations within the body, vitamin B12 is part of a biochemical pathway that synthesizes the DNA component thymine. GIF (gastric intrinsic factor) is a 417 amino acid secreted glycoprotein that is expressed in gastric mucosa. GIF is produced by parietal cells of the stomach and is necessary for absorption of vitamin B12. Once vitamin B12 is bound by GIF, it can be absorbed in the terminal ileum via the receptor cubilin. Pernicious anemia, an autoimmune disease that destroys parietal cells within the stomach, results from lack of intrinsic factor leading to malabsorption of vitamin B12 and megaloblastic anemia, which is characterized by large immature and dysfunctional red blood cells. Defects in the GIF gene itself is the cause of hereditary intrinsic factor deficiency, which is also characterized by subsequent megaloblastic anemia.

## REFERENCES

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- Seetharam, B., et al. 1999. Cellular import of cobalamin (Vitamin B-12). *J. Nutr.* 129: 1761-1764.
- Seetharam, B. and Yammani, R.R. 2003. Cobalamin transport proteins and their cell-surface receptors. *Expert Rev. Mol. Med.* 5: 1-18.
- Gordon, M.M., et al. 2004. A genetic polymorphism in the coding region of the gastric intrinsic factor gene (GIF) is associated with congenital intrinsic factor deficiency. *Hum. Mutat.* 23: 85-91.
- Tanner, S.M., et al. 2005. Hereditary juvenile cobalamin deficiency caused by mutations in the intrinsic factor gene. *Proc. Natl. Acad. Sci. USA* 102: 4130-4133.
- Rufenacht, P., et al. 2008. Vitamin B12 deficiency: a challenging diagnosis and treatment. *Rev. Med. Suisse.* 4: 2212-4, 2216.

## CHROMOSOMAL LOCATION

Genetic locus: GIF (human) mapping to 11q12.1.

## SOURCE

GIF (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GIF of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-161645 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

GIF (N-12) is recommended for detection of GIF of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GIF siRNA (h): sc-97044, GIF shRNA Plasmid (h): sc-97044-SH and GIF shRNA (h) Lentiviral Particles: sc-97044-V.

Molecular Weight of GIF: 43-47 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.