SANTA CRUZ BIOTECHNOLOGY, INC.

# GIF (B-2): sc-514524

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Vitamin $B_{12}$, 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 $B_{12}$ 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 $B_{12}$. Once vitamin $B_{12}$ 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 $B_{12}$ 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


1. Hewitt, J.E., et al. 1991. Human gastric intrinsic factor: characterization of cDNA and genomic clones and localization to human chromosome 11. Genomics 10: 432-440.
2. Seetharam, B., et al. 1999. Cellular import of cobalamin (vitamin B-12). J. Nutr. 129: 1761-1764.
3. Seetharam, B. and Yammani, R.R. 2003. Cobalamin transport proteins and their cell-surface receptors. Expert Rev. Mol. Med. 5: 1-18.
4. 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.
5. 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.
6. Rufenacht, P., et al. 2008. Vitamin $B_{12}$ deficiency: a challenging diagnosis and treatment. Rev. Med. Suisse 4: 2212-2214, 2216-2217.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 609342. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/


## CHROMOSOMAL LOCATION

Genetic locus: GIF (human) mapping to 11q12.1; Gif (mouse) mapping to 19 A.

## SOURCE

GIF (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 392-411 at the C-terminus of GIF of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514524 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

GIF (B-2) is recommended for detection of GIF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 siRNA (m): sc-145396, GIF shRNA Plasmid (h): sc-97044-SH, GIF shRNA Plasmid (m): sc-145396-SH, GIF shRNA (h) Lentiviral Particles: sc-97044-V and GIF shRNA (m) Lentiviral Particles: sc-145396-V.

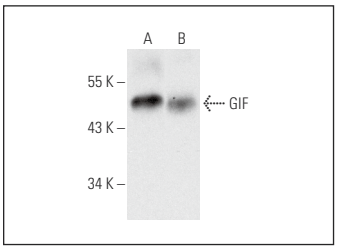
Molecular Weight of GIF: 43-47 kDa.

Positive Controls: human stomach extract: sc-363780 or mouse stomach extract: sc-394628.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




GIF (B-2): sc-514524. Western blot analysis of GIF expression in human stomach (**A**) and mouse stomach (**B**) tissue extracts.

## SELECT PRODUCT CITATIONS


1. Katsumata, O., et al. 2017. Cellular and subcellular localization of ADP-ribosylation factor 6 in mouse peripheral tissues. Histochem. Cell Biol. 148: 577-596.


## STORAGE

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

## RESEARCH USE

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