

## GC-C (537): sc-100302

### BACKGROUND

Guanylate cyclases belong to the adenylyl cyclase class-4/guanylyl cyclase family. There are two forms of guanylate cyclase, a soluble form (GCS or sGC), which act as receptors for nitric oxide, and a membrane-bound receptor form (GC), which are peptide hormone receptors. The GC-C protein is composed of an extracellular domain, a single transmembrane domain and a cytoplasmic region consisting of a kinase-like domain and a catalytic domain. It is expressed as two differentially glycosylated forms, a precursor form present in the endoplasmic reticulum and a form present on the plasma membrane. Ligand binding to the extracellular domain of GC-C promotes the accumulation of cGMP. GC-C acts as the receptor for heat-stable enterotoxins, small peptides secreted by some pathogenic strains of *E. coli* that cause severe secretory diarrhea. GC-C also binds to guanylin and uroguanylin peptides, which modulate renal function in response to oral salt load.

### REFERENCES

- Denninger, J.W. and Marletta, M.A. 1999. Guanylate cyclase and the NO/cGMP signaling pathway. *Biochim. Biophys. Acta* 1411: 334-350.
- Condorelli, P. and George, S.C. 2001. *In vivo* control of soluble guanylate cyclase activation by nitric oxide: a kinetic analysis. *Biophys. J.* 80: 2110-2119.
- Ghanekar, Y., Chandrashaker, A. and Visweswariah, S.S. 2003. Cellular refractoriness to the heat-stable enterotoxin peptide is associated with alterations in levels of the differentially glycosylated forms of guanylyl cyclase C. *Eur. J. Biochem.* 270: 3848-3857.
- Ghanekar, Y., Chandrashaker, A., Tatu, U. and Visweswariah, S.S. 2004. Glycosylation of the receptor guanylate cyclase C: role in ligand binding and catalytic activity. *Biochem. J.* 379: 653-663.
- Nakauchi, M. and Suzuki N. 2005. Enterotoxin/guanylin receptor type guanylyl cyclases in non-mammalian vertebrates. *Zool. Sci.* 22: 501-509.
- Kuhn, M. 2005. Cardiac and intestinal natriuretic peptides: insights from genetically modified mice. *Peptides* 26: 1078-1085.

### CHROMOSOMAL LOCATION

Genetic locus: GUCY2C (human) mapping to 12p13.1.

### SOURCE

GC-C (537) is a mouse monoclonal antibody raised against partial recombinant protein mapping at the N-terminus of GC-C of human origin.

### PRODUCT

Each vial contains 100 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### STORAGE

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

### APPLICATIONS

GC-C (537) is recommended for detection of GC-C of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

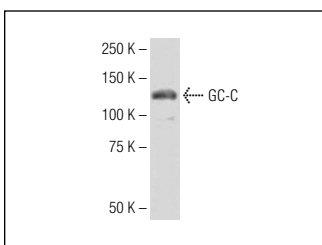
Suitable for use as control antibody for GC-C siRNA (h): sc-45492, GC-C shRNA Plasmid (h): sc-45492-SH and GC-C shRNA (h) Lentiviral Particles: sc-45492-V.

Molecular Weight of GC-C: 130/1450 kDa.

### 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).

### DATA



GC-C (537): sc-100302. Western blot analysis of GC-C expression in 293 whole cell lysate.

### SELECT PRODUCT CITATIONS

- Liu, Y., Cheng, G., Qian, J., Ju, H., Zhu, Y., Stefano, M., Keilholz, U. and Li, D. 2017. Expression of guanylyl cyclase C in tissue samples and the circulation of rectal cancer patients. *Oncotarget* 8: 38841-38849.

### 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) for detailed protocols and support products.