

# GC-C (K-14): sc-34426

## 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., et al. 1999. Guanylate cyclase and the NO/cGMP signaling pathway. *Biochim. Biophys. Acta* 1411: 334-350.
- Condorelli, P., et al. 2001. *In vivo* control of soluble guanylate cyclase activation by nitric oxide: a kinetic analysis. *Biophys. J.* 80: 2110-2119.
- Ghanekar, Y., et al. 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., et al. 2004. Glycosylation of the receptor guanylate cyclase C: role in ligand binding and catalytic activity. *Biochem. J.* 379: 653-663.
- Nakauchi, M., et al. 2005. Enterotoxin/guanylin receptor type guanylyl cyclases in non-mammalian vertebrates. *Zool. Sci.* 22: 501-509.
- Kuhn, M., et al. 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; *Gucy2c* (mouse) mapping to 6 G1.

## SOURCE

GC-C (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GC-C 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-34426 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

GC-C (K-14) is recommended for detection of GC-C of mouse, rat and 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).

GC-C (K-14) is also recommended for detection of GC-C in additional species, including equine and canine.

Suitable for use as control antibody for GC-C siRNA (h): sc-45492, GC-C siRNA (m): sc-45493, GC-C shRNA Plasmid (h): sc-45492-SH, GC-C shRNA Plasmid (m): sc-45493-SH, GC-C shRNA (h) Lentiviral Particles: sc-45492-V and GC-C shRNA (m) Lentiviral Particles: sc-45493-V.

Molecular Weight of GC-C: 130/145 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.



Try **GC-C (537): sc-100302**, our highly recommended monoclonal alternative to GC-C (K-14).