

# ROS-GC2 (C-15): sc-34524

## BACKGROUND

Guanylate cyclases belong to the adenylyl cyclase class-4/guanylyl cyclase family. Originally identified in bovine retina, rod outer segment membrane guanylate cyclase (ROS-GC) proteins are membrane bound cyclases that serve a key function in photoreceptor physiology. One unique feature of ROS-GCs is that they are not activated by extracellular peptide hormones, but are regulated by calmodulin-like  $Ca^{2+}$ -binding proteins GCAP1 and GCAP2. The GCAPs sense changes in intracellular  $Ca^{2+}$  concentration during illumination and activate ROS-GCs when the  $Ca^{2+}$  decreases below 500-600 nM in a dark adapted cell. One feature distinguishing the two forms of ROS-GCs is that ROS-GC1 has two  $Ca^{2+}$  switches and is regulated by GCAP1, whereas ROS-GC2 has only one switch and is regulated by GCAP2. ROS-GC2 also contains a unique stretch of 5 amino acids on its C-terminus which is not present in ROS-GC1.

## REFERENCES

1. Goracznik, R., et al. 1997. Structural and functional characterization of a second subfamily member of the calcium-modulated bovine ROD outer segment membrane guanylate cyclase, ROS-GC2. *Biochem. Biophys. Res. Commun.* 234: 666-670.
2. Duda, T., et al. 1998. Differential activation of ROD outer segment membrane guanylate cyclases, ROS-GC1 and ROS-GC2, by CD-GCAP and identification of the signaling domain. *Biochem. Biophys. Res. Commun.* 242: 118-122.
3. Duda, T., et al. 1998. ROD outer segment membrane guanylate cyclase type 1 (ROS-GC1) gene: structure, organization and regulation by phorbol ester, a protein kinase C activator. *Mol. Cell. Biochem.* 189: 63-70.
4. Goracznik, R.M., et al. 1998. Calcium modulated signaling site in type 2 ROD outer segment membrane guanylate cyclase (ROS-GC2). *Biochem. Biophys. Res. Commun.* 245: 447-453.
5. Kumar, V.D., et al. 1999. A second calcium regulator of ROD outer segment membrane guanylate cyclase, ROS-GC1: neurocalcin. *Biochemistry* 38: 12614-12620.
6. Venkataraman, V., et al. 2000. ROD outer segment membrane guanylate cyclase type 1-linked stimulatory and inhibitory calcium signaling systems in the pineal gland: biochemical, molecular, and immunohistochemical evidence. *Biochemistry* 39: 6042-6052.
7. Koch, K.W., et al. 2002. Photoreceptor specific guanylate cyclases in vertebrate phototransduction. *Mol. Cell. Biochem.* 230: 97-106.
8. Subbaraya, I., et al. 2003. Structure and  $Ca^{2+}$  regulation of frog photoreceptor guanylate cyclase, ROS-GC1. *Mol. Cell. Biochem.* 254: 9-19.

## CHROMOSOMAL LOCATION

Genetic locus: GUCY2F (human) mapping to Xq22.3; Gucy2f (mouse) mapping to X F2.

## SOURCE

ROS-GC2 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of ROS-GC2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-34524 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ROS-GC2 (C-15) is recommended for detection of ROS-GC2 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).

ROS-GC2 (C-15) is also recommended for detection of ROS-GC2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for ROS-GC2 siRNA (h): sc-45441, ROS-GC2 siRNA (m): sc-45442, ROS-GC2 shRNA Plasmid (h): sc-45441-SH, ROS-GC2 shRNA Plasmid (m): sc-45442-SH, ROS-GC2 shRNA (h) Lentiviral Particles: sc-45441-V and ROS-GC2 shRNA (m) Lentiviral Particles: sc-45442-V.

## 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.

## 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.

## PROTOCOLS

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