SANTA CRUZ BIOTECHNOLOGY, INC.

ROS-GC2 (H-100): sc-50513

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Guanylate cyclases belong to the adenylyl cyclase class-4/guanylyl cyclase family. Originally identified in cow 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

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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. Goraczniak, 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 (H-100) is a rabbit polyclonal antibody raised against amino acids 151-250 mapping within an N-terminal extracellular domain of ROS-GC2 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.

APPLICATIONS

ROS-GC2 (H-100) 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), 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).

ROS-GC2 (H-100) 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 goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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 or our catalog for detailed protocols and support products.