SANTA CRUZ BIOTECHNOLOGY, INC.

ROS-GC1 (A-5): sc-514879

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) and a membrane-bound receptor form. Rod outer segment membrane guanylate cyclase (ROS-GC) is a critical component of the vertebrate phototransduction machinery. ROS-GC1 is present in the retinal tissue and is localized exclusively in the nuclei and inner segments of the rod and cone photoreceptor cells. Defects in GUCY2D, the gene encoding ROS-GC1 are a cause of dominant cone-rod dystrophy type 6 (CORD6). CORD6 disease is characterized by the initial degeneration of cone photoreceptor cells, causing early loss of visual acuity and color vision, followed by the degeneration of rod photoreceptor cells leading to progressive night blindness and peripheral visual field loss.

REFERENCES

1. Kumar, V.D., et al. 1999. A second calcium regulator of rod outer segment membrane guanylate cyclase, ROS-GC1: neurocalcin. Biochemistry 38: 12614-12620.
2. Denninger, J.W., et al. 1999. Guanylate cyclase and the .NO/cGMP signaling pathway. Biochim. Biophys. Acta 1411: 334-350.
3. 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.
4. Condorelli, P., et al. 2001. *In vivo* control of soluble guanylate cyclase activation by nitric oxide: a kinetic analysis. Biophys. J. 80: 2110-2119.
5. Subbaraya, I., et al. 2003. Structure and Ca^{2+} regulation of frog photoreceptor guanylate cyclase, ROS-GC1. Mol. Cell. Biochem. 254: 9-19.
6. SWISS-PROT/TrEMBL (Q02846). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html.

CHROMOSOMAL LOCATION

Genetic locus: GUCY2D (human) mapping to 17p13.1.

SOURCE

ROS-GC1 (A-5) is a mouse monoclonal antibody raised against amino acids 81-305 mapping within an N-terminal extracellular domain of ROS-GC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

ROS-GC1 (A-5) is recommended for detection of ROS-GC1 of 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 ROS-GC1 siRNA (h): sc-45429, ROS-GC1 shRNA Plasmid (h): sc-45429-SH and ROS-GC1 shRNA (h) Lentiviral Particles: sc-45429-V.

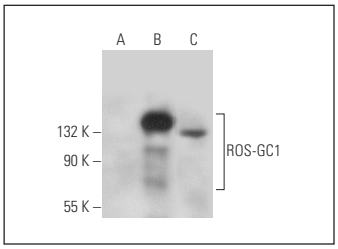
Molecular Weight of ROS-GC1: 120 kDa.

Positive Controls: ROS-GC1 (h): 293T Lysate: sc-129683 or Y79 cell lysate: sc-2240.

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, 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 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



ROS-GC1 (A-5): sc-514879. Western blot analysis of ROS-GC1 expression in non-transfected 293T: sc-117752 (**A**), human ROS-GC1 transfected 293T: sc-129683 (**B**) and Y79 (**C**) whole cell lysates.

RESEARCH USE

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