

ROS-GC1 (B-7): sc-376217

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.

CHROMOSOMAL LOCATION

Genetic locus: GUCY2D (human) mapping to 17p13.1; Gucy2e (mouse) mapping to 11 B3.

SOURCE

ROS-GC1 (B-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1081-1103 at the C-terminus of ROS-GC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ROS-GC1 (B-7) is available conjugated to agarose (sc-376217 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376217 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376217 PE), fluorescein (sc-376217 FITC), Alexa Fluor® 488 (sc-376217 AF488), Alexa Fluor® 546 (sc-376217 AF546), Alexa Fluor® 594 (sc-376217 AF594) or Alexa Fluor® 647 (sc-376217 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376217 AF680) or Alexa Fluor® 790 (sc-376217 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376217 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

ROS-GC1 (B-7) is recommended for detection of ROS-GC1 of mouse, rat and 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 siRNA (m): sc-45430, ROS-GC1 shRNA Plasmid (h): sc-45429-SH, ROS-GC1 shRNA Plasmid (m): sc-45430-SH, ROS-GC1 shRNA (h) Lentiviral Particles: sc-45429-V and ROS-GC1 shRNA (m) Lentiviral Particles: sc-45430-V.

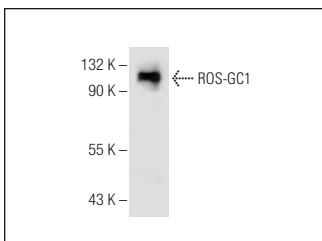
Molecular Weight of ROS-GC1: 120 kDa.

Positive Controls: rat eye extract: sc-364805 or mouse eye extract: sc-364241.

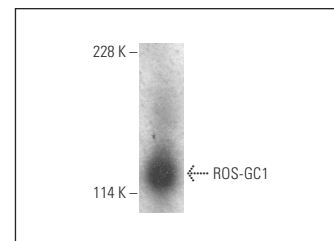
RECOMMENDED SUPPORT REAGENTS

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). 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 (B-7): sc-376217. Western blot analysis of ROS-GC1 expression in rat eye tissue extract.



ROS-GC1 (B-7) HRP: sc-376217 HRP. Direct western blot analysis of ROS-GC1 expression in mouse eye tissue extract.

SELECT PRODUCT CITATIONS

1. Makino, C.L., et al. 2019. Modes of accessing bicarbonate for the regulation of membrane guanylate cyclase (ROS-GC) in retinal rods and cones. *eNeuro* 6: ENEURO.0393-18.2019.

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.