

UGCG (1E5): sc-293235



The Power to Question

BACKGROUND

Glucosylceramide synthase (GCS), also designated ceramide glucosyltransferase, belongs to the glycosyltransferase 2 family. It is a widely expressed integral membrane protein encoded by UGCG. The enzyme can be found in the plasma membrane of all eukaryotic cells, and a significant concentration of glucosylceramide synthase activity has been reported in the Golgi complex. Glucosylceramide synthase catalyzes the first glycosylation step in glycosphingolipid biosynthesis and functions as a glucosyltransferase and flippase in the transfer of glucose to ceramide. Glucosylceramide synthase operates in cell recognition, cell proliferation and differentiation, immune recognition and signal transduction. The regulation of ceramide levels through glucosylceramide synthase has been associated with the induction of apoptosis and notable research implicates this relationship with drug-induced apoptosis in a variety of cell types.

REFERENCES

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- Ichikawa, S., et al. 1996. Expression cloning of a cDNA for human ceramide glucosyltransferase that catalyzes the first glycosylation step of glycosphingolipid synthesis. *Proc. Natl. Acad. Sci. USA* 93: 4638-4643.
- Paul, P., et al. 1996. Purification and characterization of UDP-glucose: ceramide glucosyltransferase from rat liver Golgi membranes. *J. Biol. Chem.* 271: 2287-2293.
- Watanabe, R., et al. 1998. Up-regulation of glucosylceramide synthase expression and activity during human keratinocyte differentiation. *J. Biol. Chem.* 273: 9651-9655.
- Liu, Y.Y., et al. 1999. Expression of glucosylceramide synthase, converting ceramide to glucosylceramide, confers adriamycin resistance in human breast cancer cells. *J. Biol. Chem.* 274: 1140-1146.
- Uchida, Y., et al. 2004. Ceramide reduction and transcriptional up-regulation of glucosylceramide synthase through doxorubicin-activated Sp1 in drug-resistant HL-60/ADR cells. *Cancer Res.* 64: 6271-6279.
- SWISS-PROT/TrEMBL (Q16739). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: UGCG (human) mapping to 9q31.3; Ugcg (mouse) mapping to 4 B3.

SOURCE

UGCG (1E5) is a mouse monoclonal antibody raised against amino acids 33-131 of UGCG of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

UGCG (1E5) is recommended for detection of UGCG 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

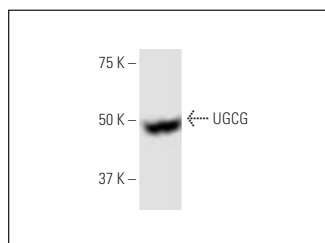
Suitable for use as control antibody for UGCG siRNA (h): sc-45404, UGCG siRNA (m): sc-45405, UGCG shRNA Plasmid (h): sc-45404-SH, UGCG shRNA Plasmid (m): sc-45405-SH, UGCG shRNA (h) Lentiviral Particles: sc-45404-V and UGCG shRNA (m) Lentiviral Particles: sc-45405-V.

Molecular Weight of UGCG: 38 kDa.

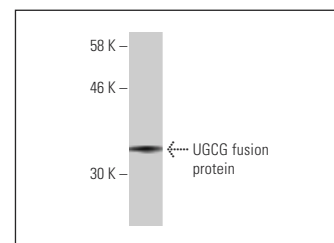
Positive Controls: HL-60 whole cell lysate: sc-2209.

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).

DATA

UGCG (1E5): sc-293235. Western blot analysis of UGCG expression in HL-60 whole cell lysate.



UGCG (1E5): sc-293235. Western blot analysis of human recombinant UGCG fusion protein.

SELECT PRODUCT CITATIONS

- Chen, S., et al. 2023. Role of UDP-glucose ceramide glucosyltransferase in venous malformation. *Front. Cell Dev. Biol.* 11: 1178045.

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 for detailed protocols and support products.