

# glycogen synthase 2 (G-8): sc-390391

## BACKGROUND

Glycogen [starch] synthase belongs to the mammalian/fungal glycogen synthase family of proteins. Two forms of this protein exist, a liver form and a muscle form, both of which have the same function in the glycogen biosynthesis pathway. Glycogen synthase transfers the glycosyl residue from UDP-Glucose to the nonreducing end of  $\alpha$ -1,4-glucan. The liver glycogen synthase protein is truncated by 34 amino acids compared to the muscle form. However, these enzymes differ significantly in their amino- and carboxyl-terminal regions. Muscle glycogen synthase serves to fuel muscular activity only and is regulated by muscle contraction and by catecholamines. Liver glycogen synthase mediates blood glucose homeostasis in response to nutritional cues. Defects in the gene encoding liver glycogen synthase results in glycogen storage disease type 0 (GSD0), a rare form of fasting ketotic hypoglycemia.

## REFERENCES

1. Pitcher, J., et al. 1988. Identification of the 38-kDa subunit of rabbit skeletal muscle glycogen synthase as glycogenin. *Eur. J. Biochem.* 169: 497-502.
2. Bai, G., et al. 1990. The primary structure of rat liver glycogen synthase deduced by cDNA cloning. Absence of phosphorylation sites 1a and 1b. *J. Biol. Chem.* 265: 7843-7848.
3. Gerich, J.E. 1993. Control of glycaemia. *Baillieres Clin. Endocrinol. Metab.* 7: 551-586.
4. Nuttall, F.Q., et al. 1994. Primary structure of human liver glycogen synthase deduced by cDNA cloning. *Arch. Biochem. Biophys.* 311: 443-449.

## CHROMOSOMAL LOCATION

Genetic locus: GYS2 (human) mapping to 12p12.1; Gys2 (mouse) mapping to 6 G2.

## SOURCE

glycogen synthase 2 (G-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 8-37 at the N-terminus of glycogen synthase 2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

glycogen synthase 2 (G-8) is available conjugated to agarose (sc-390391 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390391 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390391 PE), fluorescein (sc-390391 FITC), Alexa Fluor<sup>®</sup> 488 (sc-390391 AF488), Alexa Fluor<sup>®</sup> 546 (sc-390391 AF546), Alexa Fluor<sup>®</sup> 594 (sc-390391 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-390391 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-390391 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-390391 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390391 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

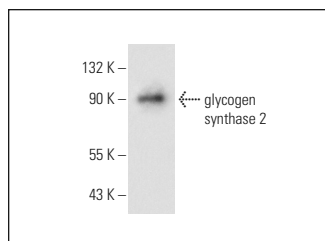
glycogen synthase 2 (G-8) is recommended for detection of glycogen synthase 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 glycogen synthase 2 siRNA (h): sc-60946, glycogen synthase 2 siRNA (m): sc-60947, glycogen synthase 2 shRNA Plasmid (h): sc-60946-SH, glycogen synthase 2 shRNA Plasmid (m): sc-60947-SH, glycogen synthase 2 shRNA (h) Lentiviral Particles: sc-60946-V and glycogen synthase 2 shRNA (m) Lentiviral Particles: sc-60947-V.

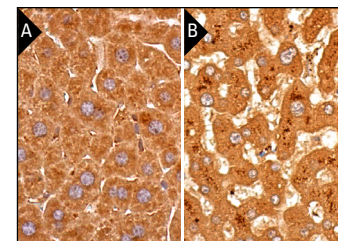
Molecular Weight of glycogen synthase 2: 81 kDa.

Positive Controls: human liver extract: sc-363766.

## DATA



glycogen synthase 2 (G-8): sc-390391. Western blot analysis of glycogen synthase 2 expression in human liver tissue extract.



glycogen synthase 2 (G-8): sc-390391. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse liver (A) and human liver (B) tissue showing cytoplasmic staining of hepatocytes.

## SELECT PRODUCT CITATIONS

1. Li, K., et al. 2021. Hepatic proteomic analysis of Selenoprotein T knockout mice by TMT: implications for the role of Selenoprotein T in glucose and lipid metabolism. *Int. J. Mol. Sci.* 22: 8515.
2. Abdollahi, M., et al. 2022. Insulin-related liver pathways and the therapeutic effects of aerobic training, green coffee, and chlorogenic acid supplementation in prediabetic mice. *Oxid. Med. Cell. Longev.* 2022: 5318245.

## 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) for detailed protocols and support products.