SANTA CRUZ BIOTECHNOLOGY, INC.

glycogen synthase 1 (GS-7H5): sc-81173

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 α-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.

CHROMOSOMAL LOCATION

Genetic locus: Gys1 (mouse) mapping to 7 B4.

SOURCE

Glycogen synthase 1 (GS-7H5) is a mouse monoclonal antibody raised against glycogen sythase from skeletal muscle of rabbit 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.

glycogen synthase 1 (GS-7H5) is available conjugated to agarose (sc-81173 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81173 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81173 PE), fluorescein (sc-81173 FITC), Alexa Fluor® 488 (sc-81173 AF488), Alexa Fluor® 546 (sc-81173 AF546), Alexa Fluor® 594 (sc-81173 AF594) or Alexa Fluor® 647 (sc-81173 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81173 AF680) or Alexa Fluor® 790 (sc-81173 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

glycogen synthase 1 (GS-7H5) is recommended for detection of glycogen synthase 1 of mouse, rat and rabbit 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for glycogen synthase 1 siRNA (m): sc-61105, glycogen synthase 1 shRNA Plasmid (m): sc-61105-SH and glycogen synthase 1 shRNA (m) Lentiviral Particles: sc-61105-V.

Molecular Weight of glycogen synthase 1: 86 kDa.

Positive Controls: mouse skeletal muscle extract: sc-364250, L8 cell lysate: sc-3807 or A-10 cell lysate: sc-3806.

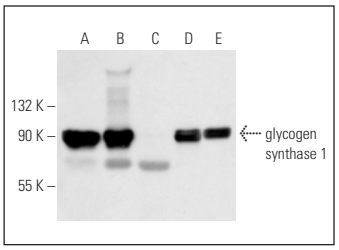
RESEARCH USE

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

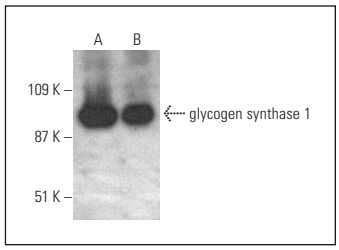
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



glycogen synthase 1 (GS-7H5): sc-81173. Western blot analysis of glycogen synthase 1 expression in rabbit skeletal muscle (**A**), rat skeletal muscle (**B**) and rat liver (**C**) tissue extracts and L8 (**D**) and A-10 (**E**) whole cell lysates.



glycogen synthase 1 (GS-7H5) HRP: sc-81173 HRP. Direct western blot analysis of glycogen synthase 1 expression in rat skeletal muscle (**A**) and mouse skeletal muscle (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Khanna, M., et al. 2013. Expression and purification of functional human glycogen synthase 1 (hGYS1) in insect cells. Protein Expr. Purif. 90: 78-83.
2. Rato, L., et al. 2015. Testosterone deficiency induced by progressive stages of diabetes mellitus impairs glucose metabolism and favors glycogenesis in mature rat sertoli cells. Int. J. Biochem. Cell Biol. 66: 1-10.
3. Yadav, A., et al. 2016. Photobiomodulatory effects of superpulsed 904nm laser therapy on bioenergetics status in burn wound healing. J. Photochem. Photobiol. B 162: 77-85.
4. Uretmen Kagiali, Z.C., et al. 2019. CLIC4 and CLIC1 bridge plasma membrane and cortical Actin network for a successful cytokinesis. Life Sci. Alliance 3: e201900558.
5. Lytridou, A.A., et al. 2020. Stbd1 promotes glycogen clustering during endoplasmic reticulum stress and supports survival of mouse myoblasts. J. Cell Sci. 133: jcs244855.
6. Liu, D., et al. 2021. Cohesin-protein Shugoshin-1 controls cardiac automaticity via HCN4 pacemaker channel. Nat. Commun. 12: 2551.
7. Sepúlveda-Quiñenao, C., et al. 2022. Glucocorticoid receptor β overexpression has agonist-independent Insulin-mimetic effects on Hep G2 glucose metabolism. Int. J. Mol. Sci. 23: 5582.
8. Cao, N., et al. 2022. The activated AMPK/mTORC2 signaling pathway associated with oxidative stress in seminal plasma contributes to idiopathic asthenozoospermia. Oxid. Med. Cell. Longev. 2022: 4240490.

PROTOCOLS

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