

Glycogenin-1 (F-12): sc-48175

BACKGROUND

Glycogen synthesis is initiated by the autoglucosylation of Glycogenin-1. Specifically, Glycogenin-1 glucosylates itself to begin the synthesis of glycogen in mammalian skeletal muscle. It acts as the primer to which further glucose monomers may be added. All of the Glycogenin-1 molecules contain at least one glucosyl residue before auto-glucosylation begins. The first step of the glycogen synthesis occurs when a glucose molecule from UDP-glucose binds to the hydroxyl group of Tyr 194 on the Glycogenin-1 molecule. Using its glucosyltransferase activity, Glycogenin-1 adds more glucoses, each one coming from UDP-glucose. The glucosylation process reaches a plateau when five new glucose residues have been added, at which point glycogen synthase (GS) takes over and further elongates the chain. Glycogenin-1 remains covalently attached to the reducing end of the glycogen molecule.

REFERENCES

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2. van Maanen, M., Fournier, P.A., Palmer, T.N. and Abraham, L.J. 1999. Characterization of mouse Glycogenin-1 cDNA and promoter region. *Biochim. Biophys. Acta* 1447: 284-290.
3. Skurat, A.V., Dietrich, A.D., Zhai, L. and Roach, P.J. 2002. GNIP, a novel protein that binds and activates glycogen initiator of glycogen biosynthesis. *J. Biol. Chem.* 277: 19331-19338.
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5. van Loon, L.J., Murphy, R., Oosterlaar, A.M., Cameron-Smith, D., Hargreaves, M., Wagenmakers, A.J. and Snow, R. 2003. Creatine supplementation increases glycogen storage but not Glut4 expression in human skeletal muscle. *Clin. Sci.* 106: 99-106.
6. Lomako, J., Lomako, W.M. and Whelan, W.J. 2004. Glycogenin-1: the primer for mammalian and yeast glycogen synthesis. *Biochim. Biophys. Acta* 1673: 45-55.

CHROMOSOMAL LOCATION

Genetic locus: GYG (human) mapping to 3q24; Gyg1 (mouse) mapping to 3 A2.

SOURCE

Glycogenin-1 (F-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Glycogenin-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-48175 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Glycogenin-1 (F-12) is recommended for detection of Glycogenin-1 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)], 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).

Glycogenin-1 (F-12) is also recommended for detection of Glycogenin-1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Glycogenin-1 siRNA (h): sc-60701, Glycogenin-1 siRNA (m): sc-60702, Glycogenin-1 shRNA Plasmid (h): sc-60701-SH, Glycogenin-1 shRNA Plasmid (m): sc-60702-SH, Glycogenin-1 shRNA (h) Lentiviral Particles: sc-60701-V and Glycogenin-1 shRNA (m) Lentiviral Particles: sc-60702-V.

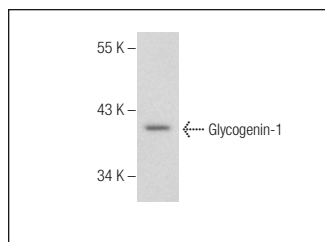
Molecular Weight of Glycogenin-1: 37 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Glycogenin-1 (F-12): sc-48175. Western blot analysis of Glycogenin-1 expression in SJRH30 whole cell lysate.

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.