Anti-Glycogen synthase 1 / GYS1 Antibody [SN75-05]

ET1611-59

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Tissue, IHC-P, IP
Molecular Wt:	Predicted band size: 84 kDa
Clone number:	SN75-05

Description: 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.

Immunogen: Recombinant protein within Human GYS1 aa 638-737 / 737.

Positive control: HEK-293 cell lysate, A431 cell lysate, RD cell lysate, Mouse heart tissue lysate, Mouse skeletal muscle tissue lysate, Rat heart tissue lysate, Rat skeletal muscle tissue lysate, human skeletal muscle tissue, mouse cardiac muscle tissue, rat cardiac muscle tissue.

Subcellular location: Cytosol, Inclusion body, Membrane.

Database links: SwissProt: P13807 Human | Q9Z1E4 Mouse | A2RRU1 Rat

Recommended Dilutions:

WB	1:2,000
IF-Tissue	1:50-1:200
IHC-P	1:1,000
IP	1-2μg/sample

Storage Buffer: 1*TBS (pH7.4), 0.05% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

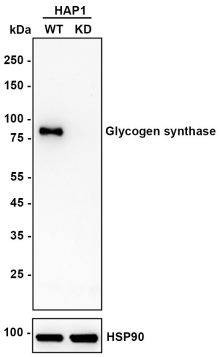

Fig1: Western blot analysis of Glycogen synthase 1 / GYS1 on different lysates with Rabbit anti-Glycogen synthase 1 / GYS1 antibody (ET1611-59) at 1/1,000 dilution.

Lane 1: HAP1-parental cell lysate
Lane 2: HAP1-Glycogen synthase 1 / GYS1 KD cell lysate

Lysates/proteins at 10 µg/Lane.

Predicted band size: 81 kDa
Observed band size: 81 kDa

Exposure time: 60 seconds; ECL: K1802;
4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ET1611-59) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

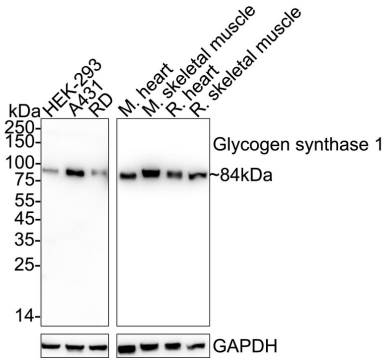

Fig2: Western blot analysis of Glycogen synthase 1 / GYS1 on different lysates with Rabbit anti-Glycogen synthase 1 / GYS1 antibody (ET1611-59) at 1/2,000 dilution.

Lane 1: HEK-293 cell lysate
Lane 2: A431 cell lysate
Lane 3: RD cell lysate
Lane 4: Mouse heart tissue lysate
Lane 5: Mouse skeletal muscle tissue lysate
Lane 6: Rat heart tissue lysate
Lane 7: Rat skeletal muscle tissue lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 84 kDa
Observed band size: 84 kDa

Exposure time: Lane 1-3: 46 seconds; Lane 4-7: 8 seconds; ECL: K1801;
4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ET1611-59) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

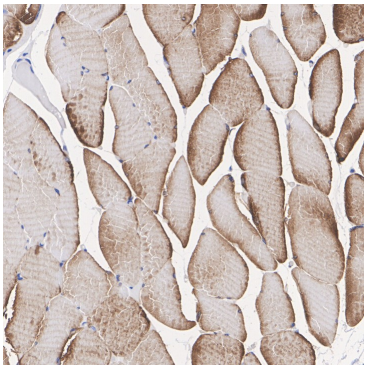

Fig3: Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue with Rabbit anti-Glycogen synthase 1 / GYS1 antibody (ET1611-59) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1611-59) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

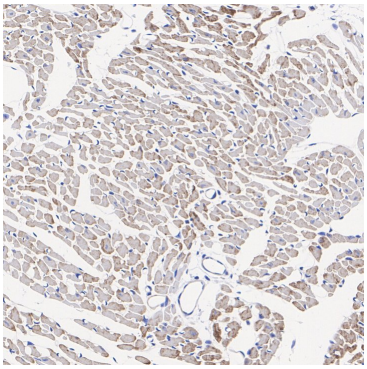

Fig4: Immunohistochemical analysis of paraffin-embedded mouse cardiac muscle tissue with Rabbit anti-Glycogen synthase 1 / GYS1 antibody (ET1611-59) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1611-59) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

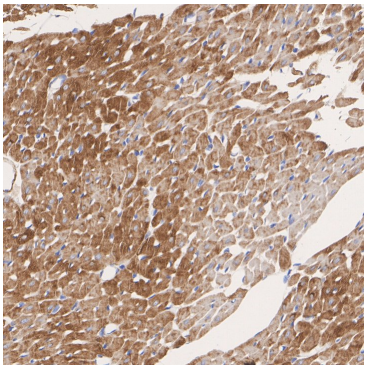

Fig5: Immunohistochemical analysis of paraffin-embedded rat cardiac muscle tissue with Rabbit anti-Glycogen synthase 1 / GYS1 antibody (ET1611-59) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1611-59) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

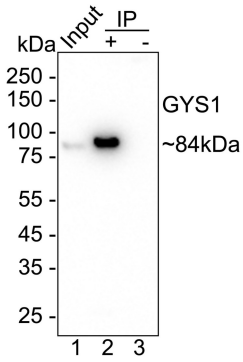

Fig6: Glycogen synthase 1 / GYS1 was immunoprecipitated from 0.2 mg A431 cell lysate with ET1611-59 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using ET1611-59 at 1/2,000 dilution. HRP Conjugated Anti-Rabbit IgG for IP Nano-secondary antibody at 1/5,000 dilution was used for 1 hour at room temperature.

Lane 1: A431 cell lysate (input)
Lane 2: ET1611-59 IP in A431 cell lysate
Lane 3: Rabbit IgG instead of ET1611-59 in A431 cell lysate

Blocking/Dilution buffer: 5% NFDM/TBST
Exposure time: 10 seconds; ECL: K1801

Background References

1. Rubio-Villena C et al. Glycogenic activity of R6, a protein phosphatase 1 regulatory subunit, is modulated by the laforin-malin complex. Int J Biochem Cell Biol 45:1479-88 (2013).
2. Zhang JS et al. Differential activity of GSK-3 isoforms regulates NF- B and TRAIL- or TNFa induced apoptosis in pancreatic cancer cells. Cell Death Dis 5:e1142 (2014).