3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Glycogen Synthase 1 (N-terminal)
produced in rabbit, affinity isolated antibody

Product Number **SAB4200218**

Product Description

Anti-Glycogen Synthase 1 (N-terminal) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a sequence at the N-terminal of human glycogen synthase 1 (GYS1) (GeneID 2997), conjugated to KLH. The corresponding sequence is identical in human GYS1 isoform 2 and highly conserved (single amino acid substitution) in mouse and rat GYS1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Glycogen Synthase 1 (N-terminal), specifically recognizes mouse and rat glycogen synthase 1. The antibody can be used in several immunochemical techniques including immunoblotting (~84 kDa), immunoprecipitation, and immunofluorescence. Detection of the GYS1 band by immunoblotting is specifically inhibited by the GYS1 immunizing peptide.

Glycogen synthase (GS), the rate-limiting enzyme for glycogen biosynthesis, catalyzes the incorporation of α-1,4-linked glucose units into glycogen chains. In mammals, two GS isoforms have been identified, the muscle GS form, glycogen synthase 1 (GYS1) and the liver specific form, glycogen synthase 2 (GYS2, LGS).[1] The muscle GS form is also expressed in several tissues, including adipose tissue, kidney, spleen, and in the nervous system. Both muscle and liver GS forms are highly regulated by phosphorylation, glucose availability, glycogen levels, and allosteric effectors.[1,2] In response to hormonal stimuli, GS is phosphorylated on up to nine serine residues resulting in progressive inactivation of the two isoforms.[2] GS activity is stimulated by insulin in liver, muscle and adipose tissues. The enzyme undergoes dephosphorylation allosteric activation and thus translocates between various subcellular compartments.[3-6] Insulin increases GS activity primarily by dephosphorylation of four key residues, a process thought to be mediated by both activation of protein phosphatase-1 (PP1) and inactivation of glycogen synthase kinase-3 (GSK3).[4]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~1.5 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1.5-3 µg/mL is recommended using mouse brain extracts (S1 fraction).

Immunoprecipitation: a working amount of 5-10 µg is recommended using rat brain extracts (S1 fraction).

Immunofluorescence: a working concentration of 5-10 µg/mL is recommended using NIH3T3 cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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3. Jensen, T.C., et al., *J. Biol. Chem.*, **275**, 40148-40154 (2000).
4. Prats, C., et al., *J. Biol. Chem.*, **280**, 23165-23172 (2005).
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VS,ER,TD,KAA,PHC,MAM 07/19-1