CELL APPLICATIONS, INC.

Glycogen Synthase Antibody

Cat. No. CG1183

Applications:	**WB,**
Detected MW:	**84 kDa**
Species & Reactivity:	**Human, Mouse, Rat**
Isotype:	**Rabbit IgG**

BACKGROUND

In both muscle and liver, glycogen concentrations are regulated by the complementary activities of glycogen phosphorylase (GP) and glycogen synthase (GS). GP catalyses the phosphorolytic degradation of glycogen to glucose-1-phosphate, the first step in the mobilization of glycogen energy stores, and is a major regulatory enzyme of glycogen metabolism. GS catalyses the transfer of the glycosyl residue from uridine diphosphate glucose (UDPG) to the non-reducing end of α-1,4-glucan. In other words, this enzyme converts excess glucose residues one by one into a polymeric chain for storage as glycogen. GS is a rate-determining enzyme for glycogen synthesis. The reaction is highly regulated by allosteric effectors such as glucose-6-phosphate, by phosphorylation reactions, and indirectly triggered by insulin.[1] GS is directly regulated by GSK-3. GSK-3 inactivates GS by phosphorylating it at the C-terminal of Ser641, Ser645, Ser649. Moreover, GS is also regulated by protein phosphatase 1 (PP1), which activates it via dephosphorylation.[2] Insulin regulates this process by a hierarchal multisite phosphorylation mechanism, in which the first kinase (PDK1) is activated by PI-3 kinase to activate second kinase Akt/PKB that leads to deactivation of the third kinase (GSK3) which is the one to inactivate GS.[3] Finally, GS also cleaves the ester bond between the C1 position of glucose and the pyrophosphate of UDP itself. Mutations in this gene are associated with muscle glycogen storage disease.[4] Alternatively spliced transcript variants encoding different isoforms have been found for this gene.

References:
1. Roach, P.J.: Curr Mol Med 2:101–20, 2002
2. Saltiel, A.R.:Cell 104:517-29, 2001
3. Jope, R.S. & Johnson, G.V.W.:Trends in Biochem. Sci. 29:95-102, 2004
4. Ohro, M. et al: J. Clin. Invest. 102:507-18, 1998

TECHNICAL INFORMATION

Source:
Glycogen synthase antibody is a rabbit antibody raised against a short peptide from C-terminal sequence of human glycogen synthase.

Specificity and Sensitivity:
This antibody detects endogenous glycogen synthase proteins without cross-reactivity with other related proteins.

Storage Buffer: Solution in phosphate-buffered saline containing 0.02% sodium azide and 50% glycerol

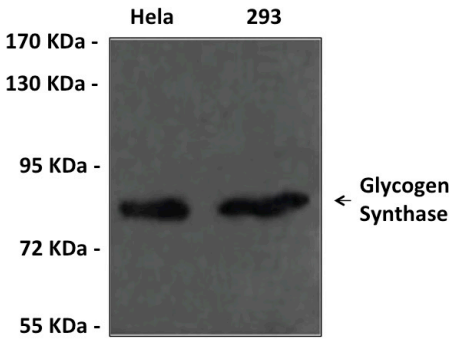
Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:500-1:1000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Analysis of extract from HeLa and 293 cells using Anti-Glycogen Synthase antibody.