Revision 4

Store at -20C

#47043

Phospho-Glycogen Synthase (Ser641) (D4H1B) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P	H M R Mk	Endogenous	85-90	Rabbit IgG	#P13807	2997

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunohistochemistry (Paraffin)	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #98074.

Specificity/Sensitivity

Phospho-Glycogen Synthase (Ser641) (D4H1B) XP® Rabbit mAb recognizes endogenous levels of both muscle and liver isoforms of glycogen synthase protein only when phosphorylated at Ser641.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to the sequence surrounding Ser641 of human liver glycogen synthase.

Background

Glycogen is a polysaccharide of glucose and serves as an energy storage in mammalian muscle and liver (1). Glycogen synthase catalyzes the rate-limiting step of glycogen biosynthesis and has two major isoforms in mammals: muscle isoform (glycogen synthase 1, GYS1) and liver isoform (glycogen synthase 2, GYS2), respectively (1). Glycogen synthase kinase-3α (GSK-3α) and glycogen synthase kinase-3β (GSK-3β) phosphorylate glycogen synthase at multiple sites in its C-terminus (Ser641, Ser645, Ser649, and Ser653), inhibiting its activity (2,3). Hypoxia alters glycogen metabolism including temporal changes of GYS1 expression and phosphorylation in cancer cells, suggesting the role of metabolic reprogramming of glycogen metabolism in cancer growth (1).

Background References

1. Favaro, E. et al. (2012) *Cell Metab* 16, 751-64.
2. Mora, A. et al. (2005) *FEBS Lett* 579, 3632-8.
3. Jensen, J. et al. (2012) *Am J Physiol Endocrinol Metab* 303, E82-9.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

Trademarks and Patents

Limited Uses

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