Revision 1

Phospho-GSK-3β (Thr390) Antibody

#3548 Store at -20C

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	46	Rabbit	#P49841	2932

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity/Sensitivity

Phospho-GSK-3β (Thr390) Antibody detects endogenous levels of human GSK-3β protein only when phosphorylated at Thr390.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr390 of human GSK-3β. Antibodies are purified by peptide affinity chromatography.

Background

Glycogen synthase kinase-3 (GSK-3) was initially identified as an enzyme that regulates glycogen synthesis in response to insulin (1). GSK-3 is a ubiquitously expressed serine/threonine protein kinase that phosphorylates and inactivates glycogen synthase. GSK-3 is a critical downstream element of the PI3K/Akt cell survival pathway whose activity can be inhibited by Akt-mediated phosphorylation at Ser21 of GSK-3α and Ser9 of GSK-3β (2,3). GSK-3 has been implicated in the regulation of cell fate in *Dictyostelium* and is a component of the Wnt signaling pathway required for *Drosophila, Xenopus,* and mammalian development (4). GSK-3 has been shown to regulate cyclin D1 proteolysis and subcellular localization (5).
The phosphorylation of GSK-3β at Thr390 was found to be a possible substrate of p38 MAPK and was reported by several labs using phosphoproteomic analysis on mitotic cell extracts (6-10).
Phosphorylation of this site was also identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's LC-MS/MS platform for modification site discovery (11). Please visit PhosphoSitePlus®, CST's modification site knowledgebase, at www.phosphosite.org for more information.

Background References

1. Welsh, G.I. et al. (1996) *Trends Cell Biol* 6, 274-9.
2. Srivastava, A.K. and Pandey, S.K. (1998) *Mol Cell Biochem* 182, 135-41.
3. Cross, D.A. et al. (1995) *Nature* 378, 785-9.
4. Nusse, R. (1997) *Cell* 89, 321-3.
5. Diehl, J.A. et al. (1998) *Genes Dev* 12, 3499-511.
6. Thornton, T.M. et al. (2008) *Science* 320, 667-70.
7. Daub, H. et al. (2008) *Mol Cell* 31, 438-48.
8. Dephoure, N. et al. (2008) *Proc Natl Acad Sci USA* 105, 10762-7.
9. Lowery, D.M. et al. (2007) *EMBO J* 26, 2262-73.
10. Beausoleil, S.A. et al. (2004) *Proc Natl Acad Sci USA* 101, 12130-5.
11. Rush, J. et al. (2005) *Nat Biotechnol* 23, 94-101.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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