

# Phospho-GSK-3 $\beta$ (Ser9) (D3A4) Rabbit mAb

**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com

**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com

**Web** ■ www.cellsignal.com

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**For Research Use Only. Not For Use In Diagnostic Procedures.**

Applications W, IP Endogenous	Species Cross-Reactivity* H, M, R	Molecular Wt. 46 kDa	Isotype Rabbit IgG**
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**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 PI3 kinase/Akt cell survival pathway whose activity can be inhibited by Akt-mediated phosphorylation at Ser21 of GSK-3 $\alpha$  and Ser9 of GSK-3 $\beta$  (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).

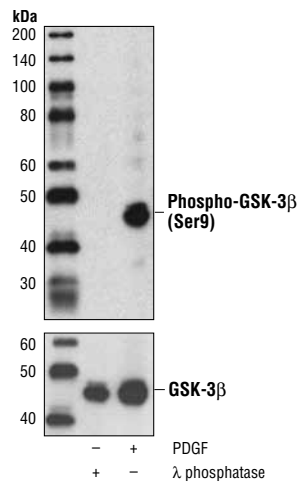
**Specificity/Sensitivity:** Phospho-GSK-3 $\beta$  (Ser9) (D3A4) Rabbit mAb detects endogenous levels of GSK-3 $\beta$  only when phosphorylated at Ser9.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser9 of human GSK-3 $\beta$ .

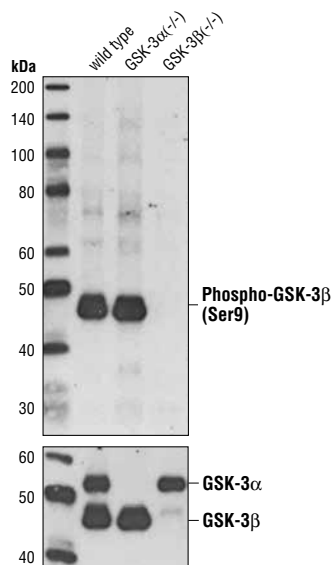
#### Background References:

- Welsh, G.I. et al. (1996) *Trends Cell. Biol.* 6, 274–279.
- Srivastava, A.K. and Pandey, S.K. (1998) *Mol. Cell. Biochem.* 182, 135–141.
- Cross, D.A. et al. (1995) *Nature* 378, 785–789.
- Nusse, R. (1997) *Cell* 89, 321–323.
- Diehl, J.A. et al. (1998) *Genes Dev.* 12, 3499–3511.

Western blot analysis of extracts from wild-type, GSK-3 $\alpha$  (-/-) and GSK-3 $\beta$  (-/-) mouse embryonic fibroblasts (MEFs), PDGF-treated using Phospho-GSK-3 $\beta$  (Ser9) (D3A4) Rabbit mAb (upper) and GSK-3 $\alpha/\beta$  Antibody (lower). (MEF wild-type, GSK-3 $\alpha$  (-/-) and GSK-3 $\beta$  (-/-) cells were kindly provided by Dr. Jim Woodgett, University of Toronto, Canada).



Western blot analysis of extracts from NIH/3T3 cells,  $\lambda$ -phosphatase or PDGF-treated, using Phospho-GSK-3 $\beta$  (Ser9) (D3A4) Rabbit mAb (upper) or GSK-3 $\beta$  (27C10) Rabbit mAb #9315 (lower).



Entrez-Gene ID #2932  
Swiss-Prot Acc. #P49841

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

#### Recommended Antibody Dilutions:

Western Blotting	1:1000
Immunoprecipitation	1:50

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide

**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.