

#9237 Store at -20°C

GSK-3 Fusion Protein



Concentration: 1 mg/ml

Small 0.04 mg

Large 0.12 mg

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

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

Web ■ www.cellsignaling.com

New 11/07

This product is for *in vitro* research use only and is not intended for use in humans or animals.

Entrez-Gene ID # P49840, P49841

Swiss-Prot Acc. # 2931, 2932

Description: GSK-3 Fusion Protein serves as a useful substrate for assaying Akt kinase activity. The GSK-3 α/β crosstide, corresponding to residues surrounding GSK-3 α/β (Ser21/9) (CGPKGPGRRRRTSSFAEG) is expressed as a GST fusion protein.

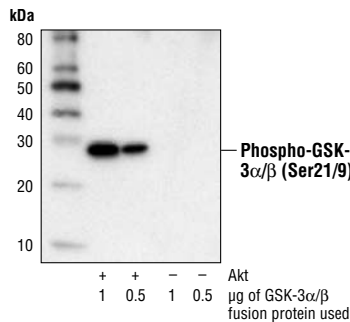
Background: Glycogen synthase kinase-3 (GSK-3) was initially identified as an enzyme that regulated glycogen synthesis in response to insulin (1). GSK-3 is a ubiquitously expressed serine/threonine protein kinase that phosphorylates and inactivates glycogen synthase. GSK-3 is a critical downstream element of the PI3 kinase/Akt cell survival pathway, and its activity can be inhibited by Akt-mediated phosphorylation at Ser21 of GSK-3 α and Ser9 of GSK-3 β (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).

Source/Purification: GSK-3 α/β crosstide, corresponding to residues surrounding GSK-3 α/β (Ser21/9) (CGPKGPGRRRRTSSFAEG) is expressed as a GST fusion protein in *E. coli*.

Molecular Weight: 27 kDa

Background References:

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



Akt kinase activity in PDGF-treated NIH/3T3 cell extracts was analyzed by IP/kinase assay. Cell extracts (200 μ l) were incubated overnight with immobilized Akt 1G1 Mouse mAb #9279. After extensive washing the kinase reaction was performed in the presence of 200 μ M of cold ATP and 1 μ g or 0.5 μ g of GSK-3 substrate. Phosphorylation of GSK-3 was measured by Western blot using Phospho-GSK-3 α/β (Ser21/9) Antibody.

Storage: Supplied in 20 mM Tris-HCl (pH 7.5 at 25°C), 50 mM NaCl, 2 mM Na₂EDTA, 1 mM dithiothreitol (DTT) and 50% glycerol. Store at -20°C.

Companion Products:

- Akt Kinase Assay Kit (Nonradioactive) #9840
- Akt1 Kinase #7500
- Phospho-GSK-3 α/β (Ser21/9) Antibody #9331
- Phospho-GSK-3 β (Ser9) Antibody #9336