

#9327 Store at -20C

## Phospho-GSK-3 $\alpha$ / $\beta$ (Ser21/9) (37F11) Rabbit mAb



**Cell Signaling**  
TECHNOLOGY®

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

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R Mk	Endogenous	51, 46	Rabbit IgG	#P49840, #P49841	2931, 2932

Product Usage Information	Application	Dilution
	Western Blotting	1:1000
	Immunoprecipitation	1:50
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 $-20^{\circ}\text{C}$ . Do not aliquot the antibody.	
Specificity / Sensitivity	Phospho-GSK-3 $\alpha$ /beta (Ser21/9) (37F11) Rabbit mAb preferentially detects endogenous levels of GSK-3 $\alpha$ when phosphorylated at Ser21 and also detects GSK-3 $\beta$ when phosphorylated at Ser9.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser21 of human GSK-3 $\alpha$ .	
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-3 $\alpha$ and Ser9 of GSK-3 $\beta$ (2,3). GSK-3 has been implicated in the regulation of cell fate in <i>Dictyostelium</i> and is a component of the Wnt signaling pathway required for <i>Drosophila</i> , <i>Xenopus</i> , and mammalian development (4). GSK-3 has been shown to regulate cyclin D1 proteolysis and subcellular localization (5).	
Background References	<ol style="list-style-type: none"> <li>1. Welsh, G.I. et al. (1996) <i>Trends Cell Biol</i> 6, 274-9.</li> <li>2. Srivastava, A.K. and Pandey, S.K. (1998) <i>Mol Cell Biochem</i> 182, 135-41.</li> <li>3. Cross, D.A. et al. (1995) <i>Nature</i> 378, 785-9.</li> <li>4. Nusse, R. (1997) <i>Cell</i> 89, 321-3.</li> <li>5. Diehl, J.A. et al. (1998) <i>Genes Dev</i> 12, 3499-511.</li> </ol>	

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 $4^{\circ}\text{C}$ with gentle shaking, overnight.
Applications Key	<b>WB:</b> Western Blotting <b>IP:</b> Immunoprecipitation
Cross-Reactivity Key	<b>H:</b> human <b>M:</b> mouse <b>R:</b> rat <b>Hm:</b> hamster <b>Mk:</b> monkey <b>Vir:</b> virus <b>Mi:</b> mink <b>C:</b> chicken <b>Dm:</b> D. melanogaster <b>X:</b> Xenopus <b>Z:</b> zebrafish <b>B:</b> bovine <b>Dg:</b> dog <b>Pg:</b> pig <b>Sc:</b> S. cerevisiae <b>Ce:</b> C. elegans <b>Hr:</b> horse <b>GP:</b> Guinea Pig <b>Rab:</b> rabbit <b>All:</b> all species expected
Trademarks and Patents	Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc. All other trademarks are the property of their respective owners. Visit <a href="http://cellsignal.com/trademarks">cellsignal.com/trademarks</a> for more information.
Limited Uses	<p>Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.</p> <p>Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the</p>

end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.