

#4818 Store at -20C

GSK-3 α (D80D1) Rabbit mAb


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3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Product Usage Information	Application Western Blotting Immunoprecipitation Immunofluorescence (Immunocytochemistry)	Dilution 1:1000 1:200 1:50 - 1:100
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	GSK-3 α (D80D1) Rabbit mAb detects endogenous levels of total GSK-3 α protein. The antibody does not cross-react with GSK-3 β .	
Species predicted to react based on 100% sequence homology:	Rat	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the sequence of human GSK-3 α .	
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 α and Ser9 of GSK-3 β (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). -GSK-3 α regulates the production of amyloid- β peptides, a major component of the plaques that accumulate with progression of Alzheimer disease. Administration of therapeutic concentrations of lithium, a GSK-3 inhibitor, attenuates amyloid- β production by specifically inhibiting the cleavage of amyloid precursor protein (APP) by γ -secretase, blocking accumulation of amyloid- β peptides in the brains of mice that overproduce APP (6).	
Background References	1. Welsh, G.I. et al. (1996) <i>Trends Cell Biol</i> 6, 274-9. 2. Srivastava, A.K. and Pandey, S.K. (1998) <i>Mol Cell Biochem</i> 182, 135-41. 3. Cross, D.A. et al. (1995) <i>Nature</i> 378, 785-9. 4. Nusse, R. (1997) <i>Cell</i> 89, 321-3. 5. Diehl, J.A. et al. (1998) <i>Genes Dev</i> 12, 3499-511. 6. Phiel, C.J. et al. (2003) <i>Nature</i> 423, 435-9.	

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	WB: Western Blotting IP: Immunoprecipitation IF-IC: Immunofluorescence (Immunocytochemistry)
Cross-Reactivity Key	H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus 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 GP: Guinea Pig Rab: rabbit All: all species expected

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