

Store at -20C
#2083

Phospho-Raptor (Ser792) Antibody



Cell Signaling
TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R	Endogenous	150	Rabbit	#Q8N122	57521

Product Usage Information	Application Western Blotting	Dilution 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-Raptor (Ser792) Antibody detects endogenous levels of raptor protein only when phosphorylated at Ser792. The antibody may also detect non-specific signals of various molecular weights.	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to the sequence surrounding Ser792 of human raptor. Antibodies are purified by peptide affinity chromatography.	
Background	<p>The regulatory associated protein of mTOR (Raptor) was identified as an mTOR binding partner that mediates mTOR signaling to downstream targets (1,2). Raptor binds to mTOR substrates, including 4E-BP1 and p70 S6 kinase, through their TOR signaling (TOS) motifs and is required for mTOR-mediated phosphorylation of these substrates (3,4). Binding of the FKBP12-rapamycin complex to mTOR inhibits the mTOR-raptor interaction, suggesting a mechanism for rapamycin's specific inhibition of mTOR signaling (5). This mTOR-raptor interaction and its regulation by nutrients and/or rapamycin is dependent on a protein called GβL (6). GβL is also part of the rapamycin-insensitive complex between mTOR and rictor (rapamycin-insensitive companion of mTOR), and may mediate rictor-mTOR signaling to downstream targets including PKCα (7). Furthermore, the rictor-mTOR complex has been identified as the previously elusive PDK2 responsible for the phosphorylation of Akt/PKB on Ser473, facilitating phosphorylation of Akt/PKB on Thr308 by PDK1 and required for the full activation of Akt/PKB (8).</p> <p>Recently raptor has been identified as a direct substrate of the AMP-activated protein kinase (AMPK) (9). AMPK phosphorylates raptor on Ser722/Ser792 (9). This phosphorylation is essential for inhibition of the raptor-containing mTOR complex 1 (mTORC1) and induces cell cycle arrest when cells are stressed for energy (9). These findings suggest that raptor is a critical switch that correlates cell cycle progression with energy status.</p>	
Background References	<ol style="list-style-type: none"> 1. Hara, K. et al. (2002) <i>Cell</i> 110, 177-89. 2. Kim, D. et al. (2002) <i>Cell</i> 110, 163-75. 3. Beugnet, A. et al. (2003) <i>J. Biol. Chem.</i> 278, 40717-22. 4. Nojima, H. et al. (2003) <i>J. Biol. Chem.</i> 278, 15461-64. 5. Oshiro, N. et al. (2004) <i>Genes Cells</i> 9, 359-66. 6. Kim, D. H. et al. (2003) <i>Mol. Cell</i> 11, 895-904. 7. Sarbassov, D. et al. (2004) <i>Curr. Biol.</i> 14, 1296-302. 8. Sarbassov, D.D. et al. (2005) <i>Science</i> 307, 1098-101. 9. Gwinn, D.M. et al. (2008) <i>Mol Cell</i> 30, 214-26. 	

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
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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