#2083 Store at –20°C

Phospho-Raptor (Ser792) Antibody

☐ Small 100 µl
(10 western blots)

☐ Petite 40 µl
(4 western blots)

Cell Signaling TECHNOLOGY®

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Entrez-Gene ID #57521
Swiss-Prot Acc. #Q8N122

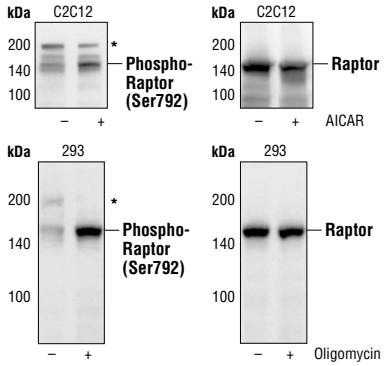
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	150 kDa	Rabbit**

Background: 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).

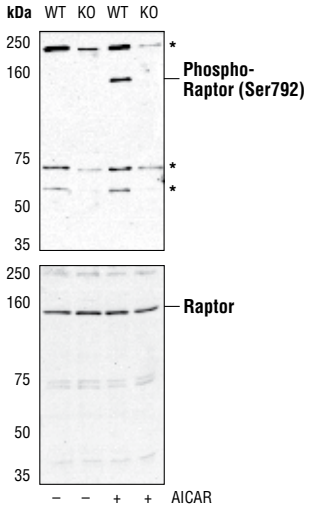
Recently raptor has been identified as a direct substrate of the AMP-activated protein kinase (AMPK) (9). AMPK phosphorylates raptor on Ser722/Ser792 (9). This phosphorylation is essential for inhibition of the raptor-containing mTOR complex 1 (mTORC1) and induces cell cycle arrest when cells are stressed for energy (9). These findings suggest that raptor is a critical switch that correlates cell cycle progression with energy status.

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.



Western blot analysis of C2C12 or 293 cells, untreated or treated with AICAR (0.5 mM for 30 minutes) or oligomycin (0.5 µM for 30 minutes), using Phospho-Raptor (Ser792) Antibody (upper and lower left) or Raptor Antibody #2280 (upper and lower right).
**Cross-reacting bands at 200 kDa.*



Western blot analysis of wild-type (WT) and AMPKα1 and α2 knockout (KO) mouse embryonic fibroblasts (MEFs), untreated or treated with AICAR (2 mM for 1 hour), using Phospho-Raptor (Ser792) Antibody (upper) or Raptor Antibody #4978 (lower). (Image provided by Dr. Reuben Shaw, the Salk Institute for Biological Studies).
**Cross-reacting bands at 60, 70 and 240 kDa.*

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.*

***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

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Hara, K. et al. (2002) *Cell* 110, 177–189.
(2) Kim, D. et al. (2002) *Cell* 110, 163–175.
(3) Beugnet, A. et al. (2003) *J. Biol. Chem.* 278, 40717–40722.
(4) Nojima, H. et al. (2003) *J. Biol. Chem.* 278, 15461–15464.
(5) Oshiro, N. et al. (2004) *Genes Cells* 9, 359–366.
(6) Kim, D. H. et al. (2003) *Mol. Cell* 11, 895–904.
(7) Sarbassov, D. et al. (2004) *Curr. Biol.* 14, 1296–1302.
(8) Sarbassov, D.D. et al. (2005) *Science* 307, 1098–1101.
(9) Gwinn, D. M. et al. (2008) Mol Cell 30, 214–226.

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.