#2974 Store at –20°C

Phospho-mTOR (Ser2481) Antibody

☐ Small 100 µl
(10 western blots)

☐ Large 300 µl
(30 western blots)

Cell Signaling TECHNOLOGY®

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Entrez-Gene ID #2475
Swiss-Prot Acc. #P42345

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk	289 kDa	Rabbit**

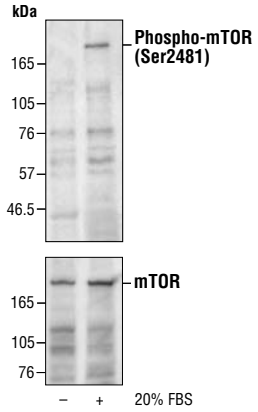
Background: The mammalian target of rapamycin (mTOR, FRAP, RAFT) is a Ser/Thr protein kinase (1-3) that functions as an ATP and amino acid sensor to balance nutrient availability and cell growth (4,5). When sufficient nutrients are available, mTOR responds to a phosphatidic acid-mediated signal to transmit a positive signal to p70 S6 kinase and participate in the inactivation of the eIF4E inhibitor, 4E-BP1 (6). These events result in the translation of specific mRNA subpopulations. mTOR is phosphorylated at Ser2448 via the PI3 kinase/Akt signaling pathway and autophosphorylated at Ser2481 (7,8). mTOR plays a key role in cell growth and homeostasis and may be abnormally regulated in tumors. For these reasons, mTOR is currently under investigation as a potential target for anti-cancer therapy (9).

Specificity/Sensitivity: Phospho-mTOR (Ser2481) Antibody detects endogenous levels of mTOR only when phosphorylated at serine 2481.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser2481 of human mTOR. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

(1) Sabers, C.J. et al. (1995) *J. Biol. Chem.* 270, 815–822.
(2) Brown, E.J. et al. (1994) *Nature* 369, 756–758.
(3) Sabatini, D.M. et al. (1994) *Cell* 78, 35–43.
(4) Gingras, A.C. et al. (2001) *Genes Dev.* 15, 807–826.
(5) Dennis, P.B. et al. (2001) *Science* 294, 1102–1105.
(6) Fang, Y. et al. (2001) *Science* 294, 1942–1945.
(7) Navé, B.T. et al. (1999) *Biochem. J.* 344 Pt 2, 427–431.
(8) Peterson, R.T. et al. (2000) *J. Biol. Chem.* 275, 7416–7423.
(9) Huang, S. and Houghton, P.J. (2003) *Curr. Opin. Pharmacol.* 3, 371–377.



Western blot analysis of extracts from 293 cells (starved for 30 hours), untreated or treated with 20% FBS for 30 minutes, using Phospho-mTOR (Ser2481) Antibody (upper) or control mTOR Antibody #2972 (lower).

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.*

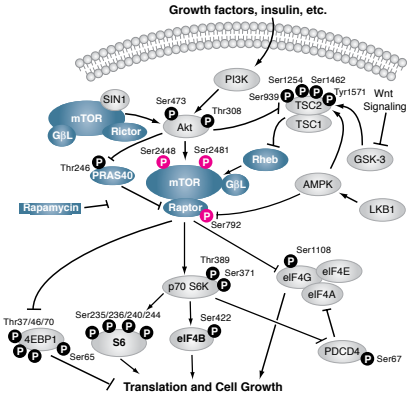
***Species cross-reactivity is determined by western blot.**

****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.



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.