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PhosphoPlus® mTOR (Ser2448) Antibody Duet

#39182



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Entrez-Gene ID #2475
UniProt ID #P42345

New 05/18

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-mTOR (Ser2448) (D9C2) XP® Rabbit mAb	5536	100 µl	289 kDa	Rabbit IgG
mTOR (7C10) Rabbit mAb	2983	100 µl	289 kDa	Rabbit IgG

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

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: mTOR (7C10) Rabbit mAb detects endogenous levels of total mTOR protein. Phospho-mTOR (Ser2448) (D9C2) XP® Rabbit mAb detects endogenous levels of mTOR protein only when phosphorylated at Ser2448.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser2481 of human mTOR and a synthetic phosphopeptide corresponding to residues surrounding Ser2448 of human mTOR protein.

Background References:

- (1) Sabers, C.J. et al. (1995) *J Biol Chem* 270, 815-22.
- (2) Brown, E.J. et al. (1994) *Nature* 369, 756-8.
- (3) Sabatini, D.M. et al. (1994) *Cell* 78, 35-43.
- (4) Gingras, A.C. et al. (2001) *Genes Dev* 15, 807-26.
- (5) Dennis, P.B. et al. (2001) *Science* 294, 1102-5.
- (6) Fang, Y. et al. (2001) *Science* 294, 1942-5.
- (7) Navé, B.T. et al. (1999) *Biochem J* 344 Pt 2, 427-31.
- (8) Peterson, R.T. et al. (2000) *J Biol Chem* 275, 7416-23.
- (9) Huang, S. and Houghton, P.J. (2003) *Curr Opin Pharmacol* 3, 371-7.

U.S. Patent No. 7,429,487, foreign equivalents, and child patents deriving therefrom.

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** 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.