

# mTOR Substrates Antibody Sampler Kit

Cat# AK0195

Upon receipt, store at -20°C. Avoid freeze/thaw cycles.

## PRODUCT DESCRIPTION

The mammalian target of rapamycin (mTOR, FRAP, RAFT) is a Ser/Thr protein kinase that functions as an ATP and amino acid sensor to balance nutrient availability and cell growth. 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. 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. 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. The regulatory associated protein of mTOR (Raptor) interacts with mTOR to mediate mTOR signaling to downstream targets. Raptor binds to mTOR substrates, such as 4E-BP1 and p70 S6 kinase, through their TOR signaling (TOS) motifs and is required for mTOR-mediated substrate phosphorylation. Binding of the FKBP12-rapamycin complex to mTOR inhibits mTOR-raptor interaction, which suggests a mechanism for the inhibition of mTOR signaling by rapamycin. This mTOR-raptor interaction and its regulation by nutrients and/or rapamycin are dependent on a protein called GβL. GβL is part of the rapamycin-insensitive complex between mTOR and rictor (rapamycin-insensitive companion of mTOR) and may mediate rictor-mTOR signaling to PKCα and other downstream targets. The rictor-mTOR complex has been identified as the previously elusive PDK2 responsible for the phosphorylation of Akt/PKB at Ser473, which is required for PDK1 phosphorylation of Akt/PKB at Thr308 and full activation of Akt/PKB.

## PRODUCT INCLUDES

Cat No.	Product name	Quantity	Applications	Reactivity	Host
<b>A340257</b>	Phospho-mTOR (Ser2448) Polyclonal Antibody	20μL	WB, IHC, IF, ELISA	Human, Mouse, Rat	Rabbit
<b>A340598</b>	mTOR Polyclonal Antibody	20μL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
<b>A340616</b>	p70 S6 kinase alpha Polyclonal Antibody	20μL	WB, IHC, IF, ELISA	Human, Mouse, Rat	Rabbit
<b>A340345</b>	Phospho-p70 S6 kinase alpha (Ser371) Polyclonal Antibody	20μL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit

<b>A1013s</b>	Goat Anti-Rabbit IgG (H+L) (peroxidase/HRP conjugated)	120µL	WB, ELISA	Rabbit	Goat
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## **PRODUCT USE LIMITATION**

These products are intended for research use only.