

GATOR Complex Antibody Sampler Kit

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Mios (D12C6) Rabbit mAb	13557	20 µl	98 kDa	Rabbit IgG
NPRL2 (D8K3X) Rabbit mAb	37344	20 µl	41 kDa	Rabbit IgG
WDR59 (D4Z7A) Rabbit mAb	53385	20 µl	110 kDa	Rabbit IgG
mTOR (7C10) Rabbit mAb	2983	20 µl	289 kDa	Rabbit IgG
Phospho-mTOR (Ser2448) (D9C2) XP [®] Rabbit mAb	5536	20 µl	289 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The GATOR Complex Antibody Sampler Kit provides an economical means of detecting select components of the GATOR complex, mTOR and phospho-mTOR (Ser2448). The kit contains enough primary antibodies to perform at least two western blot experiments per antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibody.*

Background

The mTORC1 kinase complex plays a critical role in cell growth regulation (1,2). mTORC1 activity is modulated by energy levels, growth factors, and amino acids (3,4). Four related GTPases (RagA, RagB, RagC, and RagD) interact with raptor in mTORC1, which is necessary and sufficient for mTORC1 activation in response to amino acid signals (1,2). The GAP Activity Towards Rags (GATOR) complex interacts with Rag GTPases and is made up of a pair of protein subcomplexes (5). The GATOR1 subcomplex includes the proteins DEPDC5, Nprl2 and Nprl3, and is a RagA and RagB GTPase-activating protein (GAP) that negatively regulates mTORC1 signaling. Conversely, the GATOR2 subcomplex (including Mios, WDR24, WDR59, Seh1L and Sec13 proteins) is a positive regulator of mTORC1 signaling (5).

The mammalian target of rapamycin (mTOR, FRAP, RAFT) is a Ser/Thr protein kinase (6-8) that functions as an ATP and amino acid sensor to balance nutrient availability and cell growth (9,10). 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 (11). 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 (12,13).

Background References

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