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## Phospho-RSK2 (Tyr529) Antibody

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

<b>Applications:</b> W	<b>Reactivity:</b> H Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 90	<b>Source/Isotype:</b> Rabbit	<b>UniProt ID:</b> #P51812	<b>Entrez-Gene Id:</b> 6197
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### Product Usage Information

#### Application

Western Blotting

#### Dilution

1:1000

### 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.

### Specificity/Sensitivity

Phospho-RSK2 (Tyr529) Antibody detects endogenous RSK2 protein only when phosphorylated at Tyr529. This antibody cross-reacts with some tyrosine phosphorylated proteins including EGFR.

### Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr529 of human RSK2. Antibodies are purified by protein A and peptide affinity chromatography.

### Background

The 90 kDa ribosomal S6 kinases (RSK1-4) are a family of widely expressed Ser/Thr kinases characterized by two nonidentical, functional kinase domains (1) and a carboxy-terminal docking site for extracellular signal-regulated kinases (ERKs) (2). Several sites both within and outside of the RSK kinase domain, including Ser380, Thr359, Ser363, and Thr573, are important for kinase activation (3). RSK1-3 are activated via coordinated phosphorylation by MAPKs, autophosphorylation, and phosphoinositide-3-OH kinase (PI3K) in response to many growth factors, polypeptide hormones, and neurotransmitters (3).

Phosphorylation of RSK2 on Tyr529 was identified at Cell Signaling Technology (CST) using PhosphoScan<sup>®</sup>, our LC-MS/MS platform for phosphorylation site discovery. This study identifies RSK2 as a key substrate of FGFR3 in human t(4;14)-positive multiple myeloma (MM) cells. Constitutively active FGFR3 directly phosphorylates RSK2 on Tyr529, which primes RSK2 for activation by ERK1/2 (4). RSK2 can also be phosphorylated at Tyr529 by Src family tyrosine kinases Src and Fyn in response to EGF stimulation (5). Mutations in the RSK2 gene are associated with Coffin-Lowry syndrome (CLS), an X-linked disorder characterized by mental retardation and the presence of characteristic facial anomalies (6).

### Background References

1. Fisher, T.L. and Blenis, J. (1996) *Mol Cell Biol* 16, 1212-9.
2. Smith, J.A. et al. (1999) *J Biol Chem* 274, 2893-8.
3. Dalby, K.N. et al. (1998) *J Biol Chem* 273, 1496-505.
4. Kang, S. et al. (2007) *Cancer Cell* 12, 201-14.
5. Kang, S. et al. (2007) *J Biol Chem* Submitted for Publication
6. Delaunoy, J.P. et al. (2006) *Clin Genet* 70, 161-6.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

### Applications Key

**W:** Western Blotting

### Cross-Reactivity Key

**H:** Human **Mk:** Monkey

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