

**Phospho-p90RSK (Ser380) (D3H11) Rabbit mAb**

**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IHC-P, IF-IC	H M R Mk Mi	Endogenous	90	Rabbit IgG	#P51812, #Q15349, #Q15418	6197, 6196, 6195

**Product Usage Information****Application**

Western Blotting  
Immunohistochemistry (Paraffin)  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:300  
1:800

**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.

For a carrier free (BSA and azide free) version of this product see product #93317.

**Specificity/Sensitivity**

Phospho-p90RSK (Ser380) (D3H11) Rabbit mAb recognizes endogenous levels of p90RSK1 protein when phosphorylated at Ser380. This antibody also detects p90RSK2 phosphorylated at Ser386 and p90RSK3 phosphorylated at Ser377.

**Species predicted to react based on 100% sequence homology**

Chicken, Xenopus, Zebrafish, Bovine, Dog, Pig, Horse

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser377 of human p90RSK3 protein.

**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).

Upon mitogenic stimulation, p44/42 Erk1/2 and Erk5 MAP kinases cooperatively phosphorylate p90RSK at Thr573 (RSK1 numbering) located within the C-terminal kinase domain and at Thr359/Ser363 in the linker region between the two kinase domains (3). Phosphorylation at Thr573 within the activation loop of the p90RSK C-terminal kinase domain promotes activation and phosphorylation at Ser380 within the a hydrophobic stretch of the linker region (4,5). When phosphorylated, Ser380 acts as a docking site for the constitutively active Ser/Thr kinase PDK1, which in turn phosphorylates p90RSK at Ser221 within the N-terminal kinase domain activation loop, resulting in full enzymatic activation of p90RSK (6). Antibodies against these phosphorylation sites are useful for understanding the kinetics and regulation of p90RSK activation. For more information regarding the phospho-regulatory sites within each p90RSK isoform, including more information regarding the seminal studies demonstrating the complex phosphorylation cascades involved, please see the references herein and PhosphoSitePlus® (www.phosphosite.org).

**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. Roux, P.P. et al. (2003) *Mol Cell Biol* 23, 4796-804.
5. Cargnello, M. and Roux, P.P. (2011) *Microbiol Mol Biol Rev* 75, 50-83.
6. Romeo, Y. et al. (2012) *Biochem J* 441, 553-69.

**Species Reactivity**

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

<b>Western Blot Buffer</b>	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.
<b>Applications Key</b>	<b>W:</b> Western Blotting <b>IHC-P:</b> Immunohistochemistry (Paraffin) <b>IF-IC:</b> Immunofluorescence (Immunocytochemistry)
<b>Cross-Reactivity Key</b>	<b>H:</b> Human <b>M:</b> Mouse <b>R:</b> Rat <b>Mk:</b> Monkey <b>Mi:</b> Mink
<b>Trademarks and Patents</b>	Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.  All other trademarks are the property of their respective owners. Visit <a href="http://cellsignal.com/trademarks">cellsignal.com/trademarks</a> for more information.
<b>Limited Uses</b>	<p>Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.</p> <p>Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.</p>