

#5528 Store at -20°C

RSK2 (D21B2) XP® Rabbit mAb



Cell Signaling
TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, W-S, IHC-P, IF-IC, FC-FP	H M R Mk B Pg	Endogenous	90	Rabbit IgG	#P51812	6197

Product Usage Information

Application

Western Blotting
Simple Western™
Immunohistochemistry (Paraffin)
Immunofluorescence (Immunocytochemistry)
Flow Cytometry (Fixed/Permeabilized)

Dilution

1:1000
1:10 - 1:50
1:800 - 1:3200
1:200 - 1:400
1:50 - 1:200

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.

Specificity / Sensitivity

RSK2 (D21B2) XP® Rabbit mAb recognizes endogenous levels of total RSK2 protein. This antibody does not cross-react with other RSK isoforms.

Species predicted to react based on 100% sequence homology:

Dog, Horse, Rabbit

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro686 of human RSK2 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).

Stimulation by various growth factors leads to activation of RSK2, which is a critical downstream effector kinase in several pathways. EGF stimulation leads to phosphorylation of CREB at Ser133 and phosphorylation of histone H3 *in vivo* by RSK2 (4,5). RSK2 phosphorylation of p53 may help regulate chromatin structure and cell cycle (6). RSK2 is prominently expressed in the brain and is essential for cognitive function and learning. During development, RSK2 regulates the differentiation of osteoblasts and skeletal muscle cells (7,8). Mutations in the corresponding gene are associated with Coffin-Lowry syndrome (CLS), an X-linked disorder characterized by mental retardation and the presence of characteristic facial anomalies (9).

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. De Cesare, D. et al. (1998) *Proc Natl Acad Sci U S A* 95, 12202-7.
5. Sassone-Corsi, P. et al. (1999) *Science* 285, 886-91.
6. Cho, Y.Y. et al. (2005) *Cancer Res* 65, 3596-603.
7. Yang, X. et al. (2004) *Cell* 117, 387-98.
8. Cho, Y.Y. et al. (2007) *J Biol Chem* 282, 8380-92.
9. 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

WB: Western Blotting **W-S:** Simple Western™ **IHC-P:** Immunohistochemistry (Paraffin)
IF-IC: Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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