

# p-Rsk-2 (F-7): sc-374664



The Power to Question

## BACKGROUND

The family of ribosomal S6 kinases (Rsk), designated Rsk-1 (or MAPKAP kinase-1), Rsk-2 and Rsk-3, are intracellular serine/threonine kinases that are important signaling intermediates in response to a broad range of ligand activated receptor tyrosine kinases. A unique feature common to the members of the Rsk family is that each possesses two non-identical complete kinase catalytic domains. An additional Rsk protein, Rsk-4, shows a high level of homology to the three previously isolated members of the human Rsk family. Rsk-4 is most abundantly expressed in brain and kidney and plays a role in normal neuronal development. The family of ribosomal S6 kinases includes p70 S6 kinase and p70 S6 kinase  $\beta$ , which are thought to have similar regulatory functions. MSK1 (also designated RLPK) is a novel Rsk-related protein, which, like the p90 Rsk family members, contains two non-identical complete kinase catalytic domains.

## REFERENCES

- Alcorta, D.A., et al. 1989. Sequence and expression of chicken and mouse Rsk: homologs of *Xenopus laevis* ribosomal S6 kinase. Mol. Cell. Biol. 9: 3850-3859.
- Kozma, S.C., et al. 1990. Cloning of the mitogen-activated S6 kinase from rat liver reveals an enzyme of the second messenger subfamily. Proc. Natl. Acad. Sci. USA 87: 7365-7369.
- Banerjee, P., et al. 1990. Molecular structure of a major Insulin/mitogen-activated 70 kDa S6 protein kinase. Proc. Natl. Acad. Sci. USA 87: 8550-8554.
- Sweet, L.J., et al. 1990. Identification of mitogen-responsive ribosomal protein S6 kinase pp90<sup>rsk</sup>, a homolog of *Xenopus* S6 kinase II, in chicken embryo fibroblasts. Mol. Cell. Biol. 10: 2413-2417.
- Moller, D.E., et al. 1994. Human Rsk isoforms: cloning and characterization of tissue-specific expression. Am. J. Physiol. 266: C351-C359.
- Zhao, Y., et al. 1995. Rsk-3 encodes a novel pp90<sup>rsk</sup> isoform with a unique N-terminal sequence: growth factor-stimulated kinase function and nuclear translocation. Mol. Cell. Biol. 15: 4353-4363.

## CHROMOSOMAL LOCATION

Genetic locus: RPS6KA3 (human) mapping to Xp22.12; Rps6ka3 (mouse) mapping to X F4.

## SOURCE

p-Rsk-2 (F-7) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Thr 577 phosphorylated Rsk-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374664 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

p-Rsk-2 (F-7) is recommended for detection of Thr 577 phosphorylated Rsk-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

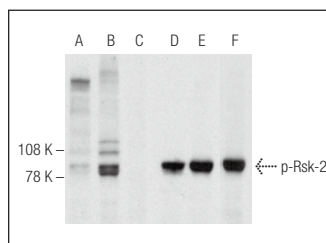
p-Rsk-2 (F-7) is also recommended for detection of correspondingly phosphorylated Rsk-2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Rsk-2 siRNA (h): sc-36441, Rsk-2 siRNA (m): sc-36442, Rsk-2 shRNA Plasmid (h): sc-36441-SH, Rsk-2 shRNA Plasmid (m): sc-36442-SH, Rsk-2 shRNA (h) Lentiviral Particles: sc-36441-V and Rsk-2 shRNA (m) Lentiviral Particles: sc-36442-V.

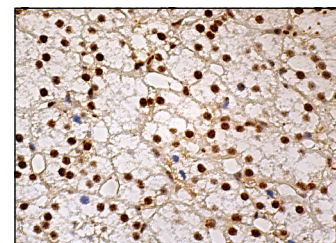
Molecular Weight of p-Rsk-2: 80 kDa.

Positive Controls: NIH/3T3 + UV cell lysate: sc-3804 or HeLa-PMA cell lysate: sc-2258.

## DATA



Western blot analysis of Rsk-2 phosphorylation in untreated (A,D), UV treated (B,E) and UV and lambda protein phosphatase (sc-200312A) treated (C,F) NIH/3T3 whole cell lysates. Antibodies tested include p-Rsk-2 (F-7): sc-374664 (A,B,C) and Rsk-2 (C-19): sc-1430 (D,E,F).



p-Rsk-2 (F-7): sc-374664. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of hematopoietic cells.

## SELECT PRODUCT CITATIONS

- Mayer, A.M.S, et al. 2021. Rsk-1 vs. Rsk-2 inhibitory activity of the marine  $\beta$ -carboline alkaloid manzamine A: a biochemical, cervical cancer protein expression, and computational study. Mar. Drugs 19: 506.
- Li, J., et al. 2022. Functional phosphoproteomics in cancer chemoresistance using CRISPR-mediated base editors. Adv. Sci. 9: e2200717.
- Maietta, I., et al. 2022. p90RSK regulates p53 pathway by MDM2 phosphorylation in thyroid tumors. Cancers 15: 121.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.