SANTA CRUZ BIOTECHNOLOGY, INC.

p-Rsk-1 (Thr 348): sc-101770

BACKGROUND

The family of ribosomal S6 kinases (Rsks), designated Rsk-1, Rsk-2 and Rsk-3, are important signaling intermediates that mediate responses to a broad range of ligand-activated receptor tyrosine kinases. It has been established that Rsk-3 is not activated by MAP kinase *in vitro*, unlike Rsk-1 and Rsk-2. A unique feature common to the three members of the Rsk family is that each possesses two non-identical complete kinase catalytic domains. The Rsk family amino-terminal kinase domain is phosphorylated on Ser 227 by 3-phosphoinositide-dependent protein kinase-1 (PDK1), which increases the kinase activity of Rsk. In the carboxy-terminal kinase domain, Rsk-1 and Rsk-2 are autophosphorylated on Ser 380 and Ser 386, respectively, which mediates the docking of PDK1 to Rsk in order to promote phosphorylation of substrates, such as Histone H3.

REFERENCES

1. 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.
2. 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.
3. Moller, D.E., et al. 1994. Human Rsk isoforms: cloning and characterization of tissue-specific expression. Am. J. Physiol. 266: C351-C359.
4. Zhao, Y., et al. 1995. Rsk-3 encodes a novel pp90rsk isoform with a unique N-terminal sequence: growth factor-stimulated kinase function and nuclear translocation. Mol. Cell. Biol. 15: 4353-4363.
5. Bjorbaek, C., et al. 1995. Divergent functional roles for p90 Rsk kinase domains. J. Biol. Chem. 270: 18848-18852.
6. Dalby, K.N., et al. 1998. Identification of regulatory phosphorylation sites in mitogen-activated protein kinase (MAPK)-activated protein kinase-1α/p90 Rsk that are inducible by MAPK. J. Biol. Chem. 273: 1496-1505.
7. Jensen, C.J., et al. 1999. 90 kDa ribosomal S6 kinase is phosphrylated and activated by 3-phosphoinositide-dependent protein kinase-1. J. Biol. Chem. 274: 27168-27176.
8. Frodin, M., et al. 2000. A phosphoserine-regulated docking site in the protein kinase Rsk-2 that recruits and activates PDK1. EMBO J. 19: 2924-2934.

CHROMOSOMAL LOCATION

Genetic locus: RPS6KA1 (human) mapping to 1p36.11; Rps6ka1 (mouse) mapping to 4 D3.

SOURCE

p-Rsk-1 (Thr 348) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Thr 348 of Rsk-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Rsk-1 (Thr 348) is recommended for detection of Thr 348 phosphorylated Rsk-1 of mouse origin and correspondingly phosphorylated Thr 359 of human and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] , immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Rsk-1 siRNA (h): sc-29475 and Rsk-1 siRNA (m): sc-39211; and as shRNA Plasmid control antibody for Rsk-1 shRNA Plasmid (h): sc-29475-SH and Rsk-1 shRNA Plasmid (m): sc-39211-SH.

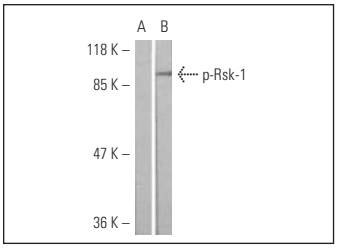
Molecular Weight of p-Rsk-1: 90 kDa.

Positive Controls: HeLa+PMA cell lysate: sc-2121 or human breast carcinoma.

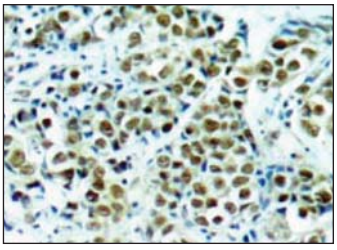
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-Rsk-1 (Thr 348): sc-101770. Western blot analysis of phosphorylated Rsk-1 expression in untreated (**A**) and PMA-treated (**B**) HeLa whole cell lysates.



p-Rsk-1 (Thr 348): sc-101770. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

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.