

## RSK1 (Human), Active

Full-length recombinant protein expressed in Sf9 cells

Cat# CY-SPR15

Lot No. K247-3  
5 µg 0.1 µg/µl

### Background:

RSK1 is a member of the RSK (ribosomal S6 kinase) family that are growth factor-regulated serine/threonine kinases. RSK1 contains 2 nonidentical kinase catalytic domains and phosphorylates various substrates, including members of the mitogen-activated kinase (MAPK) signalling pathway. RSK1 encodes a predicted 735-amino acid protein containing 2 distinct consensus ATP-binding site sequences. RSK1 transcript is present in lymphocytes, skeletal muscle, liver, and adipose tissue (1). RSKs are implicated in the activation of the mitogen-activated kinase (MAPK) cascade and the stimulation of cell proliferation and differentiation (2).

### Product Description:

Recombinant full-length human RSK1 was expressed by baculovirus in Sf9 insect cells using a N-terminal GST tag. The gene accession number is NM\_002953.

### Gene Aliases:

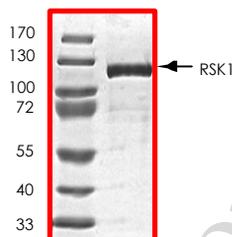
RPS6KA1; HU-1; MAPKAPK1A; S6K-alpha 1

### Formulation:

Recombinant protein stored in 50mM Tris-HCl, pH 7.5, 150mM NaCl, 0.25mM DTT, 0.1mM EGTA, 0.1mM EDTA, 0.1mM PMSF, 25% glycerol.

### Purity & Molecular Weight:

The purity was determined to be >90% by densitometry. Approx. MW 108kDa.



### Storage:

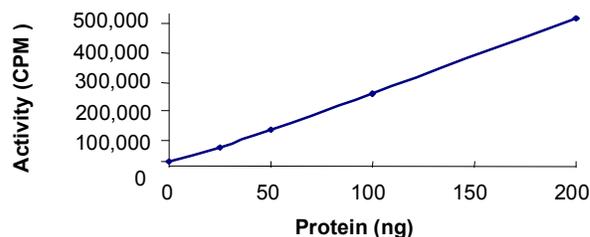
Store product at  $-70^{\circ}\text{C}$ . For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

### Stability:

1 year at  $-70^{\circ}\text{C}$  from date of shipment.

**Specific Activity:**

The specific activity was determined to be 187 nmol/min/mg as per Activity Assay Protocol.



**Activity Assay Protocol:**

Assay activity of the kinase in a 25  $\mu$ L reaction consisting of 5  $\mu$ L of 5 X Kinase Assay Buffer, 10  $\mu$ L of 1 mg/ml the Substrate Solution, 5  $\mu$ L of diluted kinase and 5  $\mu$ L of 250  $\mu$ M ATP solution containing [ $\gamma$ - $^{32}$ P] ATP (0.167  $\mu$ Ci/ $\mu$ L). Start the reaction by adding the ATP solution. Incubate for 15 minutes at 30°C. Terminate the reaction by spotting 20  $\mu$ L of the reaction mixture onto phosphocellulose P81 paper. Air-dry the P81 paper and sequentially wash 4 times for approximately 10 minutes each in 1% phosphoric acid with constant gentle stirring. Count the P81 paper in a liquid scintillation counter.

**Substrate Solution:**

S6K synthetic peptide substrate (KRRRLASLR) diluted in distilled H<sub>2</sub>O to a final concentration of 1mg/ml.

**5 X Kinase Assay Buffer:**

25mM MOPS, pH 7.2, 12.5mM  $\beta$ -glycerol-phosphate, 25mM MgCl<sub>2</sub>, 5mM EGTA, 2mM EDTA. Add 0.25mM DTT to Kinase Assay Buffer prior to use.

**References:**

1. Moller, D E. et al: Human rsk isoforms: cloning and characterization of tissue-specific expression. Am. J. Physiol. 266: C351-C359, 1994.
2. Gross, S D. et al: Induction of metaphase arrest in cleaving Xenopus embryos by the protein kinase p90(Rsk). Science 286: 1365-1367, 1999.

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