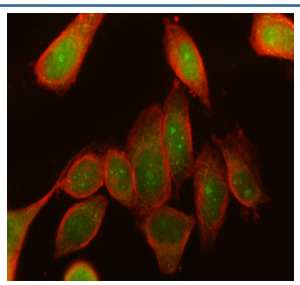
RPS6KA3 Antibody / Ribosomal protein S6 kinase alpha-3 (FY12518)

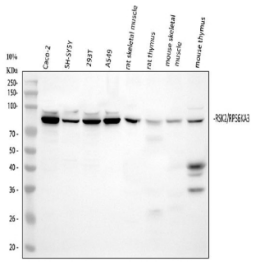
Catalog No.	Formulation	Size
FY12518	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

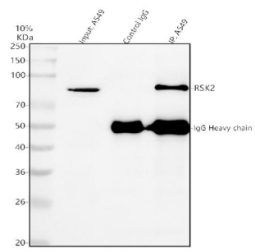
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
UniProt	P51812
Localization	Nuclear, cytoplasmic
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Immunoprecipitation : 2-4ug/500ug of lysate Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RPS6KA3 antibody is available for research use only.



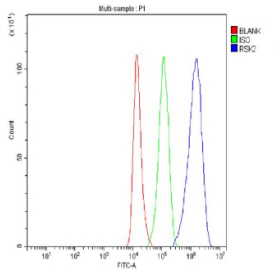
Immunofluorescent staining of RPS6KA3 using anti-RPS6KA3 antibody (green) and anti-Beta Tubulin antibody (red). RPS6KA3 was detected in immunocytochemical section of SiHa cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-RPS6KA3 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and DyLight 594 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of RPS6KA3 using anti-RPS6KA3 antibody. Lane 1: human CACO-2 whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: human whole cell lysates, Lane 5: rat skeletal muscle tissue lysates, Lane 6: rat thymus tissue lysates, Lane 7: mouse skeletal muscle tissue lysates, Lane 8: mouse thymus tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-RPS6KA3 antibody at 0.25 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. RPS6KA3/RSK2 (~90 kDa) was detected as a doublet in human samples; the upper, slower-migrating band is consistent with phosphorylation-dependent mobility shifts associated with ERK- and PDK1-mediated activation and Ser386 autophosphorylation.



Immunoprecipitation of RPS6KA3 in whole cell lysate. Western blot analysis of RPS6KA3 using anti-RPS6KA3 antibody. Lane 1: whole cell lysates (30ug) Lane 2: Rabbit control IgG instead of anti-RPS6KA3 antibody in whole cell lysate. Lane 3: anti-RPS6KA3 antibody (2ug) + whole cell lysate (500ug) After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-RPS6KA3 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. The expected molecular weight of RPS6KA3 is ~84 kDa.



Flow Cytometry analysis of 293T cells using anti-RPS6KA3 antibody. Overlay histogram showing 293T cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-RPS6KA3 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

RPS6KA3 antibody detects Ribosomal protein S6 kinase alpha-3, a serine/threonine kinase that functions as a key effector in the MAPK signaling pathway. Also known as p90RSK2, this kinase transmits signals from extracellular stimuli to regulate cell growth, survival, and gene expression. The RPS6KA3 antibody is widely used in studies of neuronal development, signal transduction, and cancer biology.

RPS6KA3 is encoded by the RPS6KA3 gene located on the X chromosome (Xp22.12). The protein is approximately 83 kilodaltons and contains two distinct kinase domains: an N-terminal kinase domain responsible for substrate phosphorylation and a C-terminal kinase domain that mediates activation through phosphorylation by ERK1/2. This dual-kinase configuration enables fine-tuned regulation of RPS6KA3 activity in response to mitogenic and stress stimuli.

The RPS6KA3 antibody detects the full-length kinase as well as phosphorylated intermediates in western blot and immunofluorescence assays. RPS6KA3 phosphorylates transcription factors such as CREB, c-Fos, and histone H3, linking MAPK activation to transcriptional control. It also phosphorylates cytoplasmic substrates involved in mRNA translation and cytoskeletal rearrangement. The protein plays a central role in synaptic plasticity and long-term memory formation, highlighting its importance in neural signaling.

Mutations in RPS6KA3 cause Coffin-Lowry syndrome, an X-linked developmental disorder characterized by cognitive

impairment and skeletal abnormalities. Disruption of RPS6KA3 signaling leads to defective ERK pathway regulation, impaired neuronal differentiation, and altered gene expression. Overactivation of RPS6KA3, on the other hand, contributes to oncogenic transformation through hyperactive MAPK signaling, promoting cell proliferation and resistance to apoptosis.

Because of its role in growth and survival pathways, RPS6KA3 serves as a potential therapeutic target in cancer and neurological disease. The RPS6KA3 antibody from NSJ Bioreagents is validated for western blot, immunofluorescence, and kinase activity assays, supporting detailed research into MAPK signaling, transcriptional regulation, and disease-related kinase mechanisms.

Application Notes

Optimal dilution of the RPS6KA3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human Rsk 2/MAPKAP Kinase 1b/RPS6KA3 recombinant protein (Position: D393-K733) was used as the immunogen for the RPS6KA3 antibody.

Storage

After reconstitution, the RPS6KA3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.