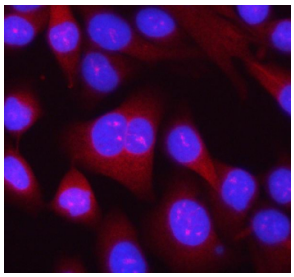
RPL14 Antibody / 60S ribosomal protein L14 (FY12513)

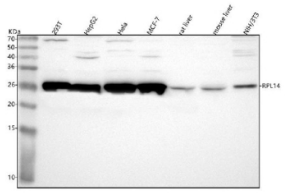
Catalog No.	Formulation	Size
FY12513	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

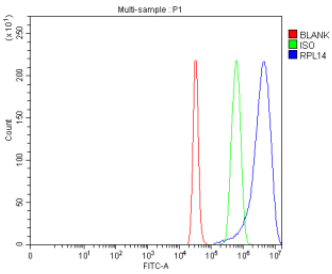
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P50914
Localization	Cytoplasmic, Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RPL14 antibody is available for research use only.



Immunofluorescent staining of RPL14 using anti-RPL14 antibody (red). RPL14 was detected in an immunocytochemical section of HELA cells. 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-RPL14 antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of RPL14 using anti-RPL14 antibody. Lane 1: human 293T whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: human MCF-7 whole cell lysates, Lane 5: rat liver tissue lysates, Lane 6: mouse liver tissue lysates, Lane 7: mouse NIH/3T3 whole cell 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-RPL14 antibody at 0.5 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. RPL14 (~23 kDa predicted) was detected as a single band at ~26 kDa, consistent with reported SDS-PAGE migration for RPL14 and with common N-terminal acetylation of ribosomal proteins that increases apparent molecular weight.



Flow Cytometry analysis of 293T cells using anti-RPL14 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-RPL14 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 (Red line) was also used as a control.

Description

RPL14 antibody detects 60S ribosomal protein L14, a structural component of the large ribosomal subunit involved in translation and ribosome assembly. RPL14 is one of approximately 80 ribosomal proteins that form the functional ribosome, catalyzing peptide bond formation and mRNA decoding. The RPL14 antibody is used in studies of ribosome biogenesis, translational control, and nucleolar organization.

RPL14 is encoded by the RPL14 gene located on human chromosome 3p21.3. The protein is about 23 kilodaltons and localizes predominantly in the cytoplasm and nucleolus. RPL14 integrates into the 60S ribosomal subunit near the peptidyl transferase center, stabilizing interactions between rRNA and ribosomal proteins during translation. Through these roles, RPL14 ensures accuracy and efficiency of protein synthesis.

The RPL14 antibody detects a 23 kilodalton band on western blot and demonstrates both cytoplasmic and nucleolar staining by immunofluorescence. RPL14 expression correlates with proliferative activity, and its upregulation is often seen in rapidly dividing cells or tumors. Inhibition of RPL14 synthesis activates ribosomal stress pathways, leading to p53 stabilization and growth arrest. Mutations or pseudogene-derived transcripts of RPL14 may contribute to tumorigenesis or ribosomopathies characterized by anemia and developmental defects.

Beyond translation, RPL14 participates in extra-ribosomal functions, including regulation of apoptosis and cell cycle progression. Under stress conditions, RPL14 can interact with transcription factors or signaling proteins, modulating gene expression independent of ribosome assembly. Proteomic studies have also detected RPL14 in mitochondrial ribosome fractions, suggesting roles in organelle-specific translation.

Because ribosomal proteins are frequently deregulated in cancer, RPL14 serves as a biomarker for tumor cell proliferation and ribosome biogenesis activity. Elevated expression has been observed in colorectal, breast, and ovarian cancers, correlating with poor prognosis. Conversely, knockdown of RPL14 reduces protein synthesis and inhibits tumor growth. NSJ Bioreagents provides a validated RPL14 antibody optimized for western blot, immunocytochemistry, and ribosomal complex analysis, supporting exploration of translation dynamics, nucleolar function, and cancer-related ribosome biology.

Application Notes

Optimal dilution of the RPL14 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RPL14 recombinant protein (Position: M1-A207) was used as the immunogen for the RPL14 antibody.

Storage

After reconstitution, the RPL14 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.