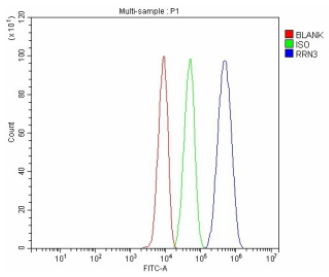
RRN3 Antibody / TIF-IA / RNA polymerase I-specific transcription initiation factor RRN3 (FY12260)

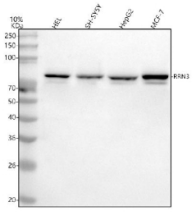
Catalog No.	Formulation	Size
FY12260	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
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, 0.2 mg Na2HPO4.
UniProt	Q9NYV6
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RRN3 antibody is available for research use only.



Flow Cytometry analysis of HepG2 cells using anti-RRN3 antibody. Overlay histogram showing HepG2 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-RRN3 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.



Western blot analysis of RRN3 using anti-RRN3 antibody. Lane 1: human HEL whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human HepG2 whole cell lysates, Lane 4: human MCF-7 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-RRN3 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. A specific band was detected for RRN3 at approximately 74 kDa. The expected band size for RRN3 is at 74 kDa.

Description

RRN3 antibody detects RNA polymerase I-specific transcription initiation factor RRN3, encoded by the RRN3 gene on chromosome 16p13.11. RRN3 antibody is widely used in studies of transcriptional regulation, ribosome biogenesis, and cell growth. RRN3 is a transcription factor that links RNA polymerase I to the transcription machinery at ribosomal DNA (rDNA) promoters, initiating rRNA synthesis. This step is critical for ribosome production and cellular growth control.

Structurally, RRN3 is a ~65 kDa phosphoprotein that interacts with both RNA polymerase I and transcription initiation factors such as SL1. It contains multiple phosphorylation sites that regulate its activity and stability. Phosphorylation by mTOR and other kinases modulates its ability to recruit RNA polymerase I to rDNA promoters. RRN3 is localized to the nucleolus, consistent with its role in ribosome synthesis.

Functionally, RRN3 is essential for transcription initiation of rRNA genes. It bridges RNA polymerase I and the pre-initiation complex, enabling promoter recognition and transcriptional activation. Regulation of RRN3 activity controls ribosome biogenesis, cell cycle progression, and response to growth signals. Researchers use RRN3 antibody to investigate ribosomal transcription, nucleolar biology, and growth signaling pathways.

Clinically, dysregulation of RRN3 is linked to cancer, where elevated rRNA synthesis supports uncontrolled proliferation. mTOR-mediated regulation of RRN3 provides a mechanistic link between nutrient sensing and ribosome production. RRN3 expression changes have been observed in metabolic diseases and stress responses. Because ribosome biogenesis is a hallmark of cancer, RRN3 is a target for therapeutic intervention. NSJ Bioreagents offers RRN3 antibody for studies of transcription regulation, nucleolar activity, and oncogenesis.

Experimentally, RRN3 antibody is used in western blotting to detect the ~65 kDa protein, in immunofluorescence microscopy to analyze nucleolar localization, and in chromatin immunoprecipitation to study promoter recruitment. Co-immunoprecipitation with RRN3 antibody identifies interacting transcription factors and RNA polymerase I subunits.

Application Notes

Optimal dilution of the RRN3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RRN3 recombinant protein (Position: D184-L651) was used as the immunogen for the RRN3 antibody.

Storage

After reconstitution, the RRN3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.