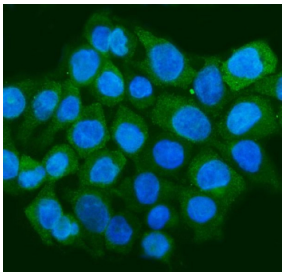
STAU1 Antibody / Staufen (R31848)

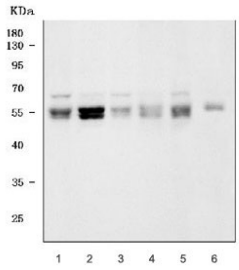
Catalog No.	Formulation	Size
R31848	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
UniProt	O95793
Localization	Cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml
Limitations	This STAU1 antibody is available for research use only.



Immunofluorescent staining of FFPE human Caco-2 cells with STAU1 antibody (green) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of 1) human K562, 2) human HepG2, 3) human Caco-2, 4) human SiHa, 5) human U-2 OS and 6) rat PC-12 cell lysate with STAU1 antibody. Predicted molecular weight: ~55 kDa (short form) and 63 kDa (long form). The ~55 kDa STAU1 band appears as a doublet in several samples, consistent with phosphorylation-dependent mobility shifts and known N-terminal isoform heterogeneity reported for the STAU1-55 protein.

Description

STAU1 antibody detects Staufen homolog 1, an RNA-binding protein that plays a central role in mRNA localization, stability, and translational regulation. The UniProt recommended name is Double-stranded RNA-binding protein Staufen homolog 1 (STAU1). As a member of the Staufen family of RNA transport factors, STAU1 mediates long-range intracellular trafficking of messenger ribonucleoprotein (mRNP) complexes and supports post-transcriptional gene regulation in diverse cell types, including neurons, epithelial cells, muscle cells, and proliferating tissues.

Functionally, STAU1 antibody identifies a protein of approximately 504 amino acids that contains multiple double-stranded RNA-binding domains (dsRBDs) enabling recognition of structured mRNA elements. STAU1 associates with ribonucleoprotein complexes that transport specific mRNAs to defined cellular regions, ensuring spatially restricted protein synthesis. This mechanism is especially prominent in neurons, where STAU1 regulates dendritic mRNA trafficking, local translation at synapses, and activity-dependent remodeling of neuronal circuits. STAU1 also participates in Staufen-mediated mRNA decay (SMD), a post-transcriptional quality-control pathway that modulates gene expression by selectively destabilizing target mRNAs marked by Staufen binding.

The STAU1 gene is located on chromosome 20q13.13 and is widely expressed, with enriched localization in the brain, heart, skeletal muscle, and developing tissues. Within cells, STAU1 localizes to the cytoplasm, particularly within RNA granules and along microtubules that support long-distance mRNA transport. It interacts with proteins involved in cytoskeletal dynamics, translation initiation, and RNA surveillance, reflecting its broad role in coordinating mRNA metabolism. STAU1 also functions in asymmetric cell division and early embryonic patterning by directing the localization of developmental mRNAs.

STAU1 integrates into key signaling pathways that regulate RNA localization and translation. It responds to changes in cell stress, nutrient status, and synaptic activity, redistributing among RNA granules and polysomes to modulate translational output. STAU1 also interacts with UPF1 and other components of the nonsense-mediated decay machinery to control mRNA turnover. Through these mechanisms, STAU1 helps orchestrate rapid shifts in protein production required for growth, differentiation, and adaptive responses.

Pathologically, altered STAU1 expression and function have been linked to neurological disease, cancer, metabolic dysregulation, and viral infection. In neurodegenerative disorders, including amyotrophic lateral sclerosis and certain ataxias, aberrant RNA granule dynamics involving STAU1 contribute to impaired axonal transport and defective local translation. Increased STAU1 expression has been reported in some cancers, where it influences proliferation, migration, and metabolic rewiring through selective post-transcriptional control. Dysregulated SMD activity is associated with stress-response defects and impaired regenerative capacity in various tissues. Viral pathogens also modulate STAU1 to enhance replication or evade cellular surveillance, underscoring its importance in hostÃ¢Â€Â“pathogen interactions.

Because STAU1 governs essential aspects of RNA transport, translation, and decay, it serves as a key molecular marker for studies of mRNA regulation, neuronal plasticity, RNA granule biology, and post-transcriptional control mechanisms. STAU1 antibody is validated for use in relevant research applications to detect Staufen expression and to support investigations in RNA localization, cytoskeletal transport, and translational regulation. NSJ Bioreagents provides STAU1 antibody reagents optimized for neuroscience, cell biology, developmental biology, and RNA metabolism research.

Application Notes

Optimal dilution of the STAU1 antibody should be determined by the researcher.

Immunogen

Amino acids HGIGKDVESCHDMAALNILKLLSELDQQSTEMPRTGN of human Staufen were used as the immunogen for the STAU1 antibody.

Storage

After reconstitution, the STAU1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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