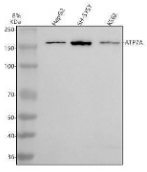
ATP7A Antibody / Copper-transporting ATPase 1 Antibody (FY12402)

Catalog No.	Formulation	Size
FY12402	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

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	Q04656
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This ATP7A Antibody / Copper-transporting ATPase 1 Antibody is available for research use only.



ATP7A Antibody Human Cell WB. Western blot analysis was performed using ATP7A Antibody on human HepG2, SH-SY5Y and K562 whole cell lysates (lanes 1-3, respectively). Proteins were transferred to a nitrocellulose membrane and incubated with the antibody at 0.5 ug/ml overnight at 4oC, followed by HRP-conjugated secondary antibody and enhanced chemiluminescent detection. A specific band is detected at approximately 160-170 kDa, consistent with the expected molecular weight of approximately 163 kDa for ATP7A. This ATP7A Antibody demonstrates detection of copper-transporting ATPase 1 in multiple human cell lysates.

Description

The ATP7A antibody targets Copper-transporting ATPase 1, a P-type ATPase encoded by the ATP7A gene that regulates intracellular copper distribution and homeostasis. Copper-transporting ATPase 1 facilitates the delivery of copper to cuproenzymes within the trans-Golgi network and mediates copper efflux from cells when intracellular levels rise. The ATP7A antibody provides a robust tool for investigating copper metabolism, metal ion transport, and disorders of copper imbalance such as Menkes disease.

Copper-transporting ATPase 1 is a multi-domain membrane protein containing ATP-binding and transmembrane copper-

binding motifs that drive active ion transport using ATP hydrolysis. It localizes mainly to the trans-Golgi network under basal conditions but relocates to the plasma membrane during copper overload. The ATP7A antibody allows researchers to study this dynamic localization, revealing how cells adapt to fluctuating copper availability to maintain metal homeostasis. ATP7A activity ensures proper metallation of key enzymes such as lysyl oxidase, dopamine beta-hydroxylase, and superoxide dismutase 1.

Loss-of-function mutations in ATP7A cause Menkes disease, a lethal X-linked disorder characterized by systemic copper deficiency leading to neurodegeneration, connective tissue abnormalities, and growth retardation. The ATP7A antibody is crucial for diagnostic and mechanistic research into this condition, enabling detection of protein expression and distribution defects in patient-derived fibroblasts and tissues. Reduced expression or mislocalization of Copper-transporting ATPase 1 disrupts copper delivery to secretory enzymes, impairing multiple physiological processes.

In addition to Menkes disease, partial ATP7A dysfunction underlies occipital horn syndrome, a milder disorder affecting connective tissue and autonomic function. The ATP7A antibody supports comparative studies of these phenotypes and aids in identifying molecular defects in copper trafficking. Furthermore, ATP7A expression influences tumor progression and drug resistance, as copper transport impacts angiogenesis and the uptake of platinum-based chemotherapeutics.

The ATP7A antibody is validated for western blotting, immunohistochemistry, and immunofluorescence, showing clear perinuclear and membrane localization depending on copper conditions. NSJ Bioreagents provides this antibody as a high-quality reagent for consistent and sensitive detection in biochemical and disease research. By enabling precise analysis of Copper-transporting ATPase 1, the ATP7A antibody supports investigations into metal ion metabolism, neurodegeneration, and therapeutic modulation of copper-dependent enzymes.

Researchers studying ATP7A in copper homeostasis and neurological function can explore our Neuroscience Antibodies page for additional targets involved in nervous system development, signaling and disease research.

Application Notes

Optimal dilution of the ATP7A Antibody / Copper-transporting ATPase 1 Antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human ATP7A was used as the immunogen for the ATP7A antibody.

Storage

After reconstitution, the ATP7A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

ATP7A antibody, Copper-transporting ATPase 1 antibody, Copper-transporting ATPase alpha polypeptide antibody, Menkes Disease-Associated Protein antibody, Menkes Protein antibody, MNK antibody, ATP7 antibody

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