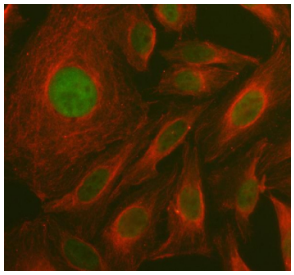
MAT1A Antibody / Methionine adenosyltransferase 1 (RQ7348)

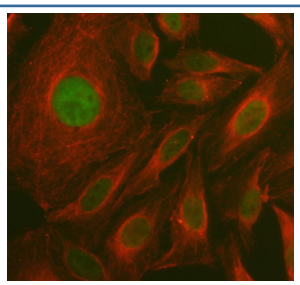
Catalog No.	Formulation	Size
RQ7348	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

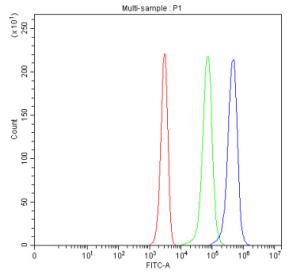
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q00266
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This MAT1A antibody is available for research use only.



Immunofluorescent staining of FFPE human U-2 OS cells with MAT1A antibody (green) and Alpha Tubulin mAb (red). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot analysis using MAT1A antibody. Lane 1: human HeLa whole cell lysate; Lane 2: human HepG2 whole cell lysate; Lane 3: human Jurkat whole cell lysate; Lane 4: human MCF-7 whole cell lysate; Lane 5: rat liver tissue lysate; Lane 6: mouse liver tissue lysate. The predicted molecular weight of MAT1A is ~44 kDa, while MAT1A antibody detects a 45-50 kDa doublet on SDS-PAGE, consistent with the commonly reported apparent migration of methionine adenosyltransferase catalytic subunits near ~48 kDa and likely reflecting post-translational modification-dependent mobility differences. Stronger bands in rat and mouse liver represent expected stronger expression in liver tissue.



Flow cytometry analysis of fixed and permeabilized human Jurkat cells with MAT1A antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= MAT1A antibody.

Description

MAT1A antibody targets Methionine adenosyltransferase 1, encoded by the MAT1A gene. Methionine adenosyltransferase 1 is a cytosolic enzyme that catalyzes the formation of S-adenosylmethionine from methionine and ATP, representing the primary source of cellular methyl donor in adult liver tissue. MAT1A is the dominant methionine adenosyltransferase isoform in hepatocytes and plays a central role in regulating cellular methylation capacity and metabolic homeostasis.

Functionally, Methionine adenosyltransferase 1 controls intracellular S-adenosylmethionine levels, thereby influencing DNA, RNA, protein, and lipid methylation reactions. Through regulation of methyl group availability, MAT1A indirectly modulates gene expression, chromatin structure, and signaling pathways linked to cellular growth and differentiation. A MAT1A antibody supports studies focused on methylation biology and liver-specific metabolic regulation.

MAT1A expression is highly enriched in adult liver and is markedly reduced or replaced by alternative isoforms in fetal liver and non-hepatic tissues. This tissue-specific expression pattern reflects its role in maintaining differentiated hepatocyte function and metabolic stability. Methionine adenosyltransferase 1 can associate with regulatory proteins and metabolic pathways that coordinate amino acid metabolism with epigenetic and transcriptional control mechanisms.

From a disease-relevance perspective, MAT1A has been extensively studied in liver disease and cancer biology. Reduced MAT1A expression or activity is associated with chronic liver disease, cirrhosis, and hepatocellular carcinoma, where disruption of S-adenosylmethionine homeostasis contributes to altered methylation and cellular transformation. MAT1A dysfunction has also been investigated in oxidative stress responses and metabolic imbalance, underscoring its importance in liver health and disease progression.

At the molecular level, Methionine adenosyltransferase 1 functions as a multimeric enzyme complex and contains conserved catalytic domains required for substrate binding and enzymatic activity. Regulatory mechanisms, including redox state and post-translational modification, can influence enzyme activity and apparent behavior in biochemical assays without altering primary sequence. MAT1A antibody reagents support research applications focused on liver metabolism, methylation-dependent signaling, and disease-associated metabolic dysregulation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the MAT1A antibody should be determined by the researcher.

Immunogen

Amino acids DYQRVVRDTIKHIGYDD were used as the immunogen for the MAT1A antibody.

Storage

After reconstitution, the MAT1A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.