

BACKGROUND

Methionine adenosyltransferase (MAT, ATP:L-methionine Sadenosyltransferase, EC 2.5.1.6) catalyzes the biosynthesis of S-adenosylmethionine (AdoMet) from methionine and ATP and thus plays a central role in cellular metabolism. The the adenosyl moiety of ATP is transferred to methionine, forming a highly energetic compound as a result of a sulphonium bond between the 5'-carbon atom of the ribose and the sulphur atom of the amino acid. There are two isoenzymes of MAT: one is liver-specific and the other is present in all tissues. The first has a relatively high Km for methionine and the second has a low Km for methionine.¹ AdoMet acts as the methyl donor for over 115 different cellular transmethylation reactions, including those of DNA, RNA, proteins, and lipids. DNA methylation is a important epigenetic feature of DNA that plays a critical role in gene expression and regulation. In addition, AdoMet participates in the transsulfuration pathway and, after decarboxylation, serves as a propylamine group donor in the biosynthesis of polyamines.² Moreover, with the transfer of methyl group, AdoMet is converted into S-adenosylhomocysteine (AdoHcy). The majority of AdoMet-dependent methyltransferases are strongly inhibited by AdoHcy. The intracellular AdoMet/AdoHcy ratio has been used as a predictor of cellular methylation activity. AdoHcy is further converted into homocysteine and adenosine by the AdoHcy hydrolase, which is widely distributed in mammalian tissues. Hypercysteinaemia has been regarded as a new modifiable risk factor for atherosclerosis and vascular diseases.³

References:

1. Castro, R. et al: J. Inherit. Metb. Dis. 29:3-20, 2006
2. Ubagai, T. et al: J. Clin. Invest. 96:1943-7, 1995
3. Fowler, B.: Semin. .Vascul. Med. 5:77-86, 2005

TECHNICAL INFORMATION

Source:

MAT/MATN1 Antibody is a mouse monoclonal antibody raised against recombinant human MAT/MATN1 fragments expressed in *E. coli*.

Specificity and Sensitivity:

This antibody detects endogenous MAT/MATN1 proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

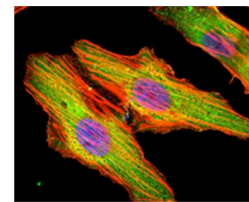
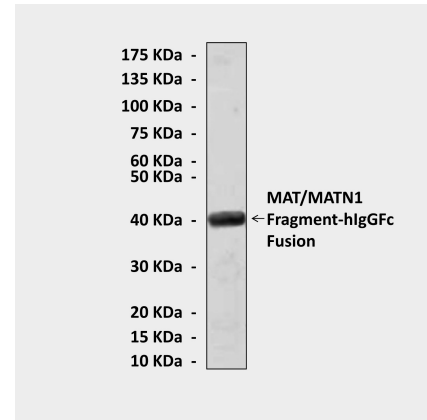
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	n/d
ICC	1:50-200
FACS	n/d

*Optimal dilutions must be determined by end user.

QUALITY CONTROL DATA



Top: Western Blot detection of MAT/MATN1 proteins in cell lysates from 293 cells and 293 cells transfected with human MAT fragment-hlgGfc fusion-expressing vectors using MAT/MATN1 Antibody. **Bottom:** This antibody stains HeLa cells in confocal immunofluorescent analysis (MAT/MATN1 Antibody: Green; Actin filaments: Red; DRAQ5 DNA Dye: Blue).

