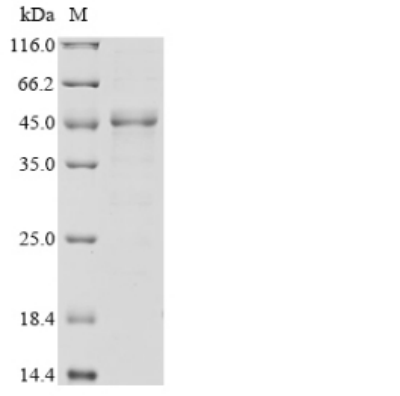
Recombinant Human S-adenosylmethionine synthase isoform type-2 (MAT2A)

Product Code	CSB-EP013517HUc7
Abbreviation	Recombinant Human MAT2A protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P31153
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol.If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MNGQLNGFHEAFIEEGTFLFTSESVGEGHPDKICDQISDAVLDAHLQQDPDAK VACETVAKTGMILLAGEITSRAAVDYQKVVREAVKHIGYDDSSKGFDYKTCNVL VALEQQSPDIAQGVHLDRNEEDIGAGDQGLMFGYATDETEECMPLTIVLAHKL NAKLAELRRNGTLPWLRPDSKTQVTVQYMQDRGAVLPIRVHTIVISVQHDEEV CLDEMRDALKEKVIKAVVPAKYLDEDTIYHLQPSGRFVIGGPQGDAGLTGRKII VDTYGGWGAHGGGAFSGKDYTKVDRSAAYAARWVAKSLVKGGLCRRVLVQ VSYAIGVSHPLSISIFHYGTSQKSERELLEIVKKNFDLRPGVIVRDLDLKKPIYQR TAAYGHFGRDSFPWEVPKKLKY
Research Area	Metabolism
Source	E.coli
Target Names	MAT2A
Expression Region	1-395aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-tagged
Mol. Weight	44.8 kDa
Protein Length	Full Length
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The production of the recombinant human MAT2A protein labeled with a 6xHis tag at the C-terminus is initiated by co-cloning the MAT2A gene (1-395aa) with the tag gene into an expression vector. The constructed vectors are introduced into E.coli cells. The transformed E.coli cells are grown under optimal conditions, and IPTG is used to induce expression. The cells are lysed, and the recombinant MAT2A protein is purified using Ni-NTA affinity chromatography, where the His tag binds to nickel ions. Elution is performed using a gradient of imidazole to recover the protein in high purity. SDS-PAGE analysis confirms a purity of over 85% of the recombinant MAT2A protein.

The human MAT2A protein is a crucial enzyme involved in the metabolism of methionine, a sulfur-containing amino acid. MAT2A catalyzes the conversion of L-methionine and ATP into S-adenosylmethionine (SAM), which serves as a universal methyl donor in numerous biological processes, including DNA methylation, RNA methylation, and the synthesis of polyamines and phospholipids [1][2]. This enzyme is particularly significant in the context of cancer, where its expression is often upregulated in various malignancies, including hepatocellular carcinoma (HCC) and breast cancer [3][4].

The expression of MAT2A is typically low in normal adult liver tissues, where MAT1A predominates; however, a switch to MAT2A expression occurs in response to liver injury or during the progression of liver cancer [3][5][6]. This switch is associated with metabolic reprogramming that supports cancer cell proliferation and survival, highlighting MAT2A's role in tumorigenesis [7][8]. Studies have shown that MAT2A expression is induced by hypoxic conditions, which are common in tumor microenvironments, further linking it to cancer progression [5]. The inhibition of MAT2A has been shown to selectively reduce the growth of cancer cells that lack the methylthioadenosine phosphorylase (MTAP) gene, indicating a synthetic lethality approach that could be exploited in cancer therapies [9][10].

References:
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Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.
Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.