

S-Methylmethionine production using MMT gene in E. coli

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The sulphur containing amino acid S-methylmethionine plays an important roles in human health. S-methylmethionine is also called as Vitamin U. S-methylmethionine helps the working of ulcer. There have been no other research about S-methylmethionine producing in E. coli. In our laboratory, Methionine S-methyltransferase(MMT) from Arabidopsis thaliana was used for producing S-methylmethionine. And other gene works to produce precursors, methionine and S-adenosylmethionine, were done. metJ, the methionine biosynthesis repressor, mmuM, the recycling pathway of S-methylmethionine, mmuP, the importer of S-methylmethionine were deleted from wild type strain. And for the overflow of precursor, we overexpressed genes which are related to producing methionine in E. coli. (metF, metA*, metH, metK). Finally the strain, dJMP_aKFcMsA*H, was constructed and 0.078g/L of S-methylmethionine was produced in 25mL flask culture with M9 media.