

عنوان مقاله:

Analysis functional features of the N5, N10-Methylene-Tetrahydrofolate

محل انتشار:

دومین همایش ملی تازه های سلولی و مولکولی (سال: 1394)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Molecular biology concerns the molecular basis of biological activity between the various systems of a cell, including the interactions between the different types of DNA, RNA and proteins and their biosynthesis, and studies how these interactions are regulated. Therefore, the purpose of this study was absorbency functional features of the N5, N10-Methylene-Tetrahydrofolate(N5, N10-MTHF). Since there were very few sources of N5, N10-MTHF molecule and these resources are torn, On the other hand because we have a lot of information about this molecule, We decided that combine our information with other research findingsMaterial & Method :In this article the prerequisite data was elicited from several sources especially interpretative sources and data banks such as ISI, PubMed, Scopus, Google scholar, ISC, and SID according to key words. Then this information was categorized and analyzedResults :The water-soluble vitamin, folic acid(FA, folate, or pteroylglutamate), consists of a molecule of PABA, with its amino end attached to a pteridine, and its carboxyl group attached to the α -amino group of glutamic acid(Glu). Tetrahydrofolate(THF), the active cofactor form of FA. THF is an essential molecule in both prokaryotic and eukaryotic cell metabolism. The methylene group donated by Ser to THF in N5, N10-MTHF formation eventually ends up on which sulfated amino acid(in the presence of vitamin B12). N5, N10-MTHF is an intermediate in glycine, Ser and threonine metabolism and one carbon metabolism. N5, N10-CH₂-MTHF can also be used as a coenzyme in the biosynthesis of thymidine. More specifically it is the C1-donor in the reactions catalyzed by thymidylate synthase and thymidylate synthase. It also acts as a coenzyme in the synthesis of Ser from glycine via the enzyme Ser hydroxymethyl transferase. N5, N10-MTHF is a substrate for MTHF reductase. This enzyme converts N5, N10-MTHF to N5-MTHF. This reaction is required for the multistep process that converts the amino acid homocysteine to methionine. The body uses methionine to make proteins and other important compounds. N5, N10-MCH₂-THF is a substrate for many enzymes including Bifunctional MTHF dehydrogenase/cyclohydrolase(mitochondrial), Aminomethyltransferase (mitochondrial), Ser hydroxymethyltransferase(mitochondrial), MTHF reductase, C-1-THF synthase(cytoplasmic), Ser hydroxymethyltransferase(cytosolic) and Thymidylate synthase. N5, N10-MTHF used for .the treatment of pancreatic cancer in combination with 5-fluorouracil

کلمات کلیدی:

(N10-Methylene-Tetrahydrofolate(N5, N10-MTHF), Folic acid(FA), Tetrahydrofolate(THF

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