

[J. Am. Chem. Soc., 108, 3152 (1986)]

Stereochemical Analysis of the Methyl Transfer Catalyzed by Cobalamin-Dependent Methionine Synthase from *Escherichia coli* B. T. M.

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Methionine samples obtained from incubation of chiral methyl-*R*- and methyl-*S*-5-CH₃-H₄ folate with cobalamin-dependent methionine synthase in the presence of dithiothreitol, aquocobalamin, homocysteine, and *S*-adenosylmethionine were degraded to recover the methyl group as acetate for chirality analysis. *F* Values of 42.5 and 44.2 for the material derived from methyl-*S*-5-CH₃-H₄ folate and 56.3 and 55.7 for that from methyl-*R*-5-CH₃-H₄ folate indicate that the cobalamin-dependent methionine synthase from *E. coli* transfers the methyl group of 5-CH₃-H₄ folate stereoselectively to the sulfur of homocysteine to generate methionine with net retention of configuration.

[Tetrahedron Lett., 27, 717 (1986)]

Ylide-induced Ylide Formation: A Novel Double Cycloaddition Reaction of a [1,2,4] Triazolo [1,5- α] pyrimidinium Ylide.

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Treatment of 5,7-dimethyl-3-phenacyl[1,2,4]triazolo[1,5- α]pyrimidinium ylide with methyl propiolate caused a novel double cycloaddition reaction to give a 2-cyanamidopyrimidine derivative and a 3,3a-dihydropyrazolo[1,5- c]pyrimidine derivative (1) in yields of 18.5% and 26.6%, respectively. The new compound (1) was a mixture of two diastereoisomers. Their structures were determined by the ¹H- and ¹³C-NMR spectroscopy and X-ray analysis.

[Biochem. Biophys. Res. Commun., 141, 555 (1986)]

2',5'-Phosphodiesterase Activity Depends Upon the Presence of a 3'-Hydroxyl Moiety in the Penultimate Position of the Oligonucleotide Substrate. D. ALSTER, D. BROZDA, Y. KITADE,* A. WONG, R. CHARUBARA,

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3'-Deoxyadenosine (3'dA, cordycepine)-substituted analogs of 2-5A core 5'-monophosphate (p5' A2' p5' A2' p5' A) were examined for their sensitivity toward degradation by the 2'-phosphodiesterase activity in cytoplasmic extracts of mouse L cells. The analogs, p5' (3'dA) 2' p5' A2' p5' A, and p5' A2' p5' A2' p5' (3'dA) were degraded at a rate comparable to p5' A2' p5' A2' p5' A itself. The data imply that sensitivity to the 2',5'-phosphodiesterase activity of mouse L cells requires the presence of 3'-hydroxyl moiety in the penultimate nucleotide.