

## Response of thi-5 and thi-1 to vitamin pyrimidine

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### Abstract

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187). Specific growth responses were not reported, and thi-5 was not included by Tatum and Bell (1946 Am. J. Botany 33:15) or by Eberhart and Tatum (1959 J. Gen. Microbiol. 20: 43; 1961 Am. J. Botany 48: 702; 1963 Arch. Biochem. Biophys. 101: 378) in their studies of thiamine biosynthesis in *Neurospora*.

When thi-5 is tested auxanographically, a clear response is obtained to vitamin pyrimidine (2-methyl-4-amino-5-aminomethyl pyrimidine, Nutritional Biochemicals). Of the other thiamine mutants, thi-1, -3 and -4 (9185, 18558, and 85902) do not respond when tested in the same way. But thi-1 resembles thi-5 in showing a strong response to 2-methyl-4-amino-5-aminomethyl pyrimidine, and this is true of both thi-1 strains 56501 and 17084. Our auxanographic tests were made at 34°C in minimal medium containing the antagonist pyriothiamine (0.01 µg/ml; Calbiochem) to reduce background growth. Visibly turbid suspensions of conidia from fresh cultures were plated in molten agar, and the test substance was added at a marked position on each plate as soon as the agar had solidified.

Eberhart and Tatum (1959) reported no response of thi-1 (56501) to vitamin pyrimidine in flask assays where vitamin pyrimidine was added to liquid medium at concentrations of 0.25 and 1 µg/ml. It may be significant that the vitamin pyrimidine used by Tatum and Bell and by Eberhart and Tatum was 5-ethoxymethyl rather than 5-aminomethyl. Another possible explanation for the difference in response, suggested by B. M. Eberhart, is that pyrimidine may be antagonizing the antagonist and restoring background growth in the auxanographic tests.

Neither our laboratory nor those of Eberhart or Tatum expect to pursue this problem further. - - - Department of Biological Sciences, Stanford University, Stanford, California 94305.

The mutant 50005 was listed as a thiamine auxotroph by Houlahan, Beadle and Calhoun (1949 Genetics 34:493), who showed that it was not allelic with thi-1, as designated thi-5 when mapped near pan-1 in linkage group IV (Perkins et al. 1962 Can. J. Genet. Cytol. 4: