Morgan, D. H. Acetyl-ornithine transaminase in Neurospora.

The defective enzyme corresponding to arg-5 has been shown to be acetyl-ornithine transaminase (EC 2.6.1.11). The array used was essentially that of Albrecht and Vogel (1964 J. Biol. Chem. 239: 1872). None of 15 arg-5 mutants kindly supplied from the collection of D. G. Catcheside gave a significant assay reading, using crude extracts and incubation periods of up to 12 hours. (Wild type extracts give optical densities due to AOT activity of about 0.5 in 15 minutes). The arg-5 mutant 27947 appears to hove a trace of activity (about 1% that of wild type) in crude extracts, but results with this allele have been somewhat inconsistent. The enzyme hos been partially purified from the wild type ST A and corresponding protein fractions from an extract of 27947 have been examined for activity with entirely negative results.

Five of Catcheside's arg-5 mutants were tested for growth response to acetyl-ornithine and gave a clear-cut positive result at M/400, although growth was greatly inferior to that given by M/400 orginine. No response was obtained with arg-4 mutants.

Accumulation of acetyl-glutamic-semialdehyde by 27947 was examined in mycelial pads from cultures grown under conditions of limiting arginine and reached about 0.6 µM per gram wet weight. No accumulation at all occurred with control cultures of arg-4 and arg-6 strains. - - - Department of Genetics, John Innes Institute, Bayfordbury, Hertford, England.