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Abstract

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A new allele of csp-2 which does not complement csp-1.

The conidial separation mutations [csp-1 (II) and csp-2 (VII)] confer upon Neurospora strains reduced ability of conidial chains to separate; double mutant strains are even further impaired (see Selitrennikoff et al. 1974 Genetics 78: 679). The one csp-2 allele and the three csp-2 alleles complement in heterokaryons and form a wild type number of free conidia. A new allele of csp-2 is described which does not complement csp-2 yet is recessive to wild type.

A strain of [poky f] which did not form free conidia was obtained from John Chalmers (University of California, Berkeley) and was found to contain a conidial separation mutant. This mutant was crossed to wild type (Oak Ridge) four times (as the male parent) and the csp phenotype segregated 1:1. This mutant strain, designated UCLA 102, was found to grow in both liquid stationary culture and "race" tubes identically with wild type. Inter se crosses among the csp strains showed that UCLA 102 was allelic with csp-2 (0 recombinants/69 with FS 590; 0/211 with FS 591; 9176 with UCLA 101) but was not allelic with csp-1 (11/40). The double mutant, csp-1; csp-2 (UCLA 102) was found to produce a very low level of free conidia, similar to other combinations of csp-1; csp-2 alleles. The phenotype of forced heterokaryons containing csp-1 and csp-2 alleles is essentially wild type as judged by either counting the number of free conidia with a haemocytometer or inverting agar-slant cultures and tapping to release free conidia (the "tap-test"; Selitrennikoff and Nelson 1973 Neurospora News 20: 34). In sharp contrast, the forced heterokaryon csp-1/csp-2 (UCLA 102) produced a number of free conidia equivalent to the csp-2 level, i.e., csp-2 (UCLA 102) did not complement with csp-1. However, csp-2 (UCLA 102) was found to be recessive to csp-2⁺.

These results indicate that the interaction of the csp genes (or gene products) is not as autonomous as previously described. The new allele of csp-2 is available from the Fungal Genetics Stock Center. Department of Anatomy, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colorado 80262.