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Some observations concerning sp and ure-2 in Neurospora

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Abstract

We are currently seeking rec-2 which is proximal to am on linkage group V and are gleaning incidental information on genes in this region and elsewhere. So far, the following is apparent: sp is recessive: each of 15 heterokaryons forced between his-3 K874; sp B132 and am1 32213 strains by growth on Vogel's + glycine medium had wild-type morphology.

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The gene order sp, ure-2, am inferred from two point crosses is confirmed by three point data: FGSC 3809 (a; ure-2 D74) was crossed to F11089 (A; sp B132, am B501). 320 random spores were isolated, 79% germinated.

Zygote genotype and recombination percent	Parental combinations		Singles Region I		Singles Region II	
sp +	am	sp + am	+ ure-2 +	sp ure-2 +	+ + am	sp + +	+ ure-2 am
+ ure-2 +		135	92	9	11	5	0
7.9	2.0						

A gene in FGSC 4299 interferes with Kolmark's urease test: While seeking to order sp, ure-2 and am, we set up a cross between FGSC 4299 (a; ure-2 47, am 32213) and T9043 (A; his-3 K874; sp B132) . Of 320 random spores , 92% germinated and were scored for urease activity by dabbing conidia onto paper soaked in urea and a pH indicator to detect ammonia production (Kolmark 1969, Mutation Res. 8:51-63). By this test, T9043 was urease positive and FGSC 4299 urease negative. However, only 23% of the progeny were urease positive, suggesting the segregation of a second mutation unlinked to ure-2. There is preliminary evidence that this additional locus could be linked to his-3.