Catcheside, D. E. A. Map location of rec-1 in N. crassa.

The presence in crosses of the gene rec-1$^+$ leads to the reduction of recombination at the his-1 locus an linkage group V and at the nit-2 locus on linkage group I. Previous work has shown rec-1 to be located between ad-7 and asn on linkage group V (Catcheside and Austin 1969 Am. J. Bot. 56: 685. Catcheside 1974 Aust. J. Biol. Sci., 27: 561). Subdivision of this interval by ro-4 and p.b-2 (Catcheside 1973 Neurospora Newsl. 20: 43; 1974 Neurospora Newsl. 21: 24) offered the possibility for more precise location of rec-1 with the attendant benefits for experimental manipulation of the locus.

A cross segregating for ad-7, ro-4, asn and ret-1 and homozygous for his-1 (K83) was made. Randomly selected spores were germinated and the genotypes of the isolates with respect to auxotrophic and morphological markers were determined. Segregants recombinant for either or both of the gene pain ad-7, ro-4 and ro-4, asn were crossed to rec-1 testers of the appropriate mating type [strain t3869:A; cot-1 (C102t); his-1 (K651), inl (37401), rec-1 and strain t4322:a; cot-1 (C102t); his-1 (K625), inl (37401), rec-1]. Recombination frequencies in these crosses were determined as previously described (Catcheside 1974 Aust. J. Biol. Sci., 27: 561).

The results, summarized in Table I, indicate that rec-1 is located between ro-4 and asn.

Table I. Results of cross locating rec-1 between ro-1 and asn.

Cross number	Zygote genotype and % recombination	Parentals	Recombinants 1	2	3	1,2	1,3	% germination
7123	un A + / + a al-2 cot-1 / cot-1 am-1 his-1 / + ro-4 + + / ad-7 + rec-1 asn (6.3) (7.4) (4.6)	124	5	10	4	1	1	74.2
		113	9	8	8	2	0	

Alleles: b39t, 15300, C102t, 47305, K83, K77, B38, MN137

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