

Order of the *aro-6* and *cpl-1* loci on linkage group VI of *Neurospora*

Thomas J. Schmidhauser-Department of Biology, The University of Louisiana at Lafayette, Lafayette, LA.

The results reported here locate the *cpl-1* locus 5.5 centimorgans to the left of the *aro-6* locus on linkage group VII of *Neurospora*.

The *aro-6* (Halsall and Doy 1969 Biochim. Biophys. Acta 185:432-446), and *cpl-1* (Chalmers 1973 Genetics 74s:43), loci have been mapped to the left arm of linkage group VI of *Neurospora* between the *ad-8* and *lys-5* loci. The order of *aro-6* and *cpl-1* on LGVII has not been determined.

The *cpl-1* lesion increases the sensitivity of *Neurospora* to chloramphenicol and is scored on medium supplemented with 1 mg/ml chloramphenicol. The wild type is resistant to 4 mg/ml chloramphenicol. The *aro-6* locus encodes one of three *Neurospora* 3-deoxy-D-arabinoheptulosonic acid-7-phosphate synthase isozymes in the aromatic amino acid biosynthetic pathway. The *aro-6* lesion prevents growth on minimal medium supplemented with inhibitors, tryptophan and phenylalanine, of the alternate two isozymes of the synthase.

The double mutant *ad-8* 1-152-7(E6), *cpl-1* ANTAS6(s) A was isolated from a preliminary cross and crossed to *aro-6* a DH1 (FGSC 1713) on solid synthetic crossing medium using *aro-6* a as the female parent. Random ascospores were isolated onto 1 ml slants of Vogel's minimal medium supplemented with adenine in 75 mm tubes. Scoring was by transfer to slants of minimal medium with appropriate supplements. No double recombinants were observed.

TABLE 1

Data obtained from random ascospore isolates from *aro-6* a x *ad-8*, *cpl-1* A

Zygote genotype				Recombination		Total and percent germination
			Parental types	Region 1	Region 2	
<i>ad-8</i>	<i>cpl-1</i>	+	72			
				12	9	163
+	+	<i>aro-6</i>	70			(82%)

12 recombinants in region 1 out of 163 progeny yields an interval of 7.4 centimorgans.

9 recombinants in region 2 out of 163 progeny yields an interval of 5.5 centimorgans. The data is consistent with the order shown in Figure 1; of the three loci tested *aro-6* is proximal to the LGVI centromere and the *ad-8* locus is distal.

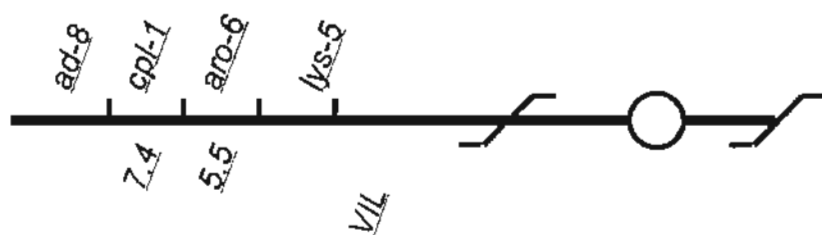


Figure 1.

Relevant region of linkage group VI of *Neurospora* showing the locations of the *aro-6* and *cpl-1* loci.

Anyia Alleman, Felica Eichler and Marcus Louis contributed to this work.