

## Isolation and map location of a new acetate-requiring mutant, ace-9, of *Neurospora crassa*

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# Isolation and map location of a new acetate-requiring mutant, *ace-9*, of *Neurospora crassa*

## Abstract

A new acetate-requiring mutant strain of *Neurospora crassa* (*ace-9*), has been isolated from the double mutant strain *cot-1;inl a*, by inositol-less death (Lester and Gross 1959. *Science* 129:572) in Vogel's medium supplemented with 0.3% sodium acetate and 2% sucrose. The mutant grows well on complex medium and on Vogel's medium supplemented with casamino acids, acetate, or acetate plus ethanol. Like *ace-2*, *ace-3* and *ace-4* (Okumura and Kuwana 1979. *Japan J. Genet.* 54:235-244), it shows very weak activity of pyruvate dehydrogenase complex, but has normal activities of pyruvate carboxylase, pyruvate kinase and glucose-6-phosphate dehydrogenase.

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A new acetate-requiring mutant strain of *Neurospora crassa* (*ace-9*), has been isolated from the double mutant strain *cot-1; inl a*, by inositol-less death (Lester and Gross 1959. Science 129:572) in Vogel's medium supplemented with 0.3% sodium acetate and 2% sucrose. The mutant grows well on complex medium and on Vogel's medium supplemented with casamino acids, acetate, or acetate plus ethanol. Like *ace-2*, *ace-3* and *ace-4* (Okumura and Kuwana 1979. Japan J. Genet. 54:235-244), it shows very weak activity of pyruvate dehydrogenase complex, but has normal activities of pyruvate carboxylase, pyruvate kinase and glucose-6-phosphate dehydrogenase.

The *ace-9* gene maps between *nuc-2* and *arg-13* on the right arm of the linkage group II (Table 1). Thus the gene sequence near *ace-9* is :-*pyr-4* - *thr-2* -Centromere- *arg-5* - *nuc-2* - *ace-9* - *arg-12* - *aro-1*.

**Table 1.** Linkage data of *ace-9* in the format of Perkins (1959, Genetics 44:1185-1208)

Zygote genotype and recombination percent	Parental combina- tion	Recombinations			Total and percent germination	Marker isolation numbers
		Singles region 1	Singles region 2	Doubles regions 1 and 2		
+ + <i>ace-9</i> <i>thr-2 arg-5</i> + 10.2 12.2	95 212	38 1	33 14	1 0	394 53%	35423 27947 KG601
+ <i>ace-9</i> + <i>pyr-4</i> + <i>arg-12</i> 19.8 3.2	51 144	36 14	1 7	0 0	253 63%	36601 KG601 UM107
+ <i>ace-9</i> + <i>nuc-2</i> + <i>aro-1</i> 1.7 9.6	15 87	1 1	1 10	0 0	115 76%	T28-M2 KG601 Y7655