

New mutants and wild type standard reference strains of *Neurospora intermedia*

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Abstract

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reference strains of *Neurospora intermedia*.

wild type strain P13A (FGSC #1766). Strains P17a and P13A have been recommended as reference strains for *N. intermedia* (Perkins, Turner, and Barry (1976) Evolution 30: 281). The mutants listed in Table 1 have been assigned to specific linkage groups and their approximate gene order has been established (Shew, manuscript in preparation).

Wild type strains with a more similar genetic background than is present between P17a and P13A would be useful for future genetic studies. To accomplish this, P17a and P13A were crossed and F₁ progeny were isolated. Those F₁'s having the best vegetative growth were then intercrossed in various combinations. The pair of F₁ isolates giving the highest percentage of discharged black spores was selected, and F₂ progeny from this cross were isolated. Selection based on vegetative growth and discharged black spore percentages was continued for five generations. Strains having a uniform vegetative growth were selected from the fifth generation to serve as wild types in future studies. One strain of each mating type was selected and designated as ShP-1a and ShP-1A.

The mutants listed in Table 1 and the two inbred strains, ShP-1a and ShP-1A, are being deposited with the Fungal Genetics Stock Center. (I would like to thank Dr. D. D. Perkins for kindly providing the wild type stocks P17a and P13A.

Mutants recently isolated from *Neurospora intermedia* are listed below in Tables 1 and 2. Induced mutants were isolated by filtration enrichment (Woodward, de Zeeuw and Srb (1954) Proc. Nat. Acad. Sci. SA 40:192) following UV irradiation to approximately 20% survival of a conidial suspension of wild type strain P17a (FGSC #1767). Mutants were then crossed to

Table 1. Mutants assigned to a specific linkage group.

Locus symbol, name, and linkage group	Origin of mutant
<u>arg-A</u> ; arginine-A (I)	UV*
<u>arg-B</u> ; arginine-B (IV)	UV
<u>arg-C</u> ; arginine-C (I)	UV
<u>arg-E</u> ; arginine-E (II)	UV
<u>arg-F</u> ; arginine-F (I)	UV
<u>met-A</u> ; methionine-A (III)	UV
<u>met-B</u> ; methionine-B (IV)	UV
<u>met-E</u> ; methionine-E (IV)	UV
<u>met-F</u> ; methionine-F (IV)	UV
<u>met-G</u> ; methionine-G (V)	UV
<u>cys-A</u> ; cysteine-A (IV)	UV
<u>cys-B</u> ; cysteine-B (VI)	UV
<u>his-A</u> ; histidine-A (I)	UV
<u>his-B</u> ; histidine-B (V)	UV
<u>his-C</u> ; histidine-C (IV)	UV
<u>his-D</u> ; histidine-D (I)	UV
<u>his-E</u> ; histidine-E (III)	UV
<u>leu-A</u> ; leucine-A (I)	UV
<u>asn-A</u> ; asparagine-A (V)	UV
<u>pdx-A</u> ; pyridoxine-A (IV)	UV
<u>acr-A</u> ; acriflavin-A (I) ^a	S*
<u>deg</u> ; delayed growth (V) ^b	S
<u>alb-A</u> ; albino-A (I) ^c	UV
<u>ora</u> ; orange agar (IV) ^d	UV
<u>col-A</u> ; colonial-A (III)	UV
<u>col-B</u> ; colonial-B (III)	UV
<u>col-C</u> ; colonial-C (IV)	S

* Ultraviolet irradiation

* Spontaneous

^a resistant to acriflavin up to 50 µg/ml^b growth is slow for the first day following conidial transfer or ascospore isolation; after 3-4 days, growth is indistinguishable from that of wild type^c mycelium is albino but produces yellow conidia^d agar appears orange in young cultures due to the orange mycelium

Table 2. Mutants not assigned to a specific linkage group

Locus symbol and name	Origin of mutant
<u>met-C</u> ; methionine-C	UV
<u>met-D</u> ; methionine-D	UV
<u>his-F</u> ; histidine-F	UV
<u>his-G</u> ; histidine-G	UV
<u>asp-A</u> ; aspartic acid-A	UV
<u>had</u> ; histidine, adenosine	UV
<u>act-A</u> ; actidione-A*	S
<u>APB</u> ; 2-amino-3-phenylbutanoic acid ^a	S
<u>pea</u> ; peach	UV
<u>yco</u> ; yellow collar	UV
<u>aki</u> ; skin-like	UV
<u>cor</u> ; collar	UV
<u>sag</u> ; salt grains	UV
<u>ucc</u> ; u-collar	UV
<u>col-D</u> ; colonial-D	UV
<u>col-E</u> ; colonial-E	UV
<u>col-F</u> ; colonial-F	S
<u>col-G</u> ; colonial-G	S

* resistant to actidione up to 10 µg/ml

^a resistant to APB up to 1200 µg/ml