Fungal Genetics Reports

Volume 20 Article 37

A screening technique for the isolation of macroconidiation mutants

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Recommended Citation
Selitrennikoff, C. P., and R.E. Nelson (1973) "A screening technique for the isolation of macroconidiation mutants," *Fungal Genetics Reports*: Vol. 20, Article 37. https://doi.org/10.4148/1941-4765.1845

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Abstract

Screening technique for macroconidiation mutants

Selitrennikoff, C. P. and R. E. Nelson. A screening technique for the isolation of macroconidiation mutants.

A rapid and simple method for the detection of cultures defective for the development of wild-type macroconidia is presented. This method provides more efficient detection of mutants than microscopic observations previously used in this lob. More importantly, mutants blocked late in the process of conidiotion ore not easily recognized in the course of routine macroscopic examination; the method described here Permits the discrimination between there and wild types.

Cultures are grown in cotton plugged tuber (7 cm x 1 cm) containing 1 ml Vogel's N + 1.5% agar for 3-5 days in the light at 35°C. Each tube is then inverted and given a single sharp tap against the metal light shade of a fluorescent lomp. The lamp provider a bright light source so that any conidia mechanically freed are visualized as a cloud of particles falling from the aerial hyphal mass towards the cotton plug.

As an example of the power of the method, a single isolate which Produced very few freed conidia was readily detected among ca. 3500 tubs cultures started from mutagenized 74-OR8-1a conidio (see Selitrennikoff 1972 Neurospora Newsl. 19: 23). In agreement, microscopic examination (600X)s towed that this culture produces chains of conidio and, relatively rarely, individual conidia. Genetic analysis demonstrated that the phenotype is due to a single gene mutation, csp-1 (conidial separation defective, allele #37), which is tightly linked to arg-3 on IL. Detailed observations of csp-1 and aconidial strains will be reported elsewhere. It moy be noted that the method hor proved useful for the detection of similar mutants in auxotrophs grown on appropriately supplemented media.

(Supported in port by an NSF Predoctoral Traineeship to CPS and an NSF Grant to R. W. Siegel).

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