

Barnett, W. E. and F. J. de Serres*

Modification of EMS-induced reversion frequencies in Neurospora with enriched plating media.

Barnett and de Serres: Modification of EMS-induced reversion frequencies in Neurospora

It is well known that ultraviolet mutation frequencies may be modified by various post-treatment nutritional conditions. Maling (personal communication) has found that the nitrous acid-induced reversion frequency of certain ad-3

Neurospora mutants may be enhanced by plating on medium supplemented with low levels of adenine. It was considered of importance, therefore, to ascertain the effects of several enriched plating media on the recovery of reverse mutations following exposure to ethyl methanesulfonate (EMS).

Conidia from an ad-3 mutant of Neurospora were uniformly treated with EMS and plated on minimal medium supplemented with various levels of adenine, and minimal medium containing casamino acids supplemented with various levels of adenine.

From the results obtained, we may draw the following conclusions: (1) Following EMS exposure, plating conidia on minimal medium plus casamino acids enhances the observed mutation frequency two-fold over that seen on minimal medium. (2) The addition of low levels of adenine to minimal medium also increases the frequency of recovered mutations by a factor of 2. (3) The addition of low levels of adenine to minimal medium supplemented with casamino acids has very little or no effect.

These results establish that the recovery of EMS-induced revertants may be modified quantitatively by plating the conidia immediately following treatment on enriched media. While superficially these findings are similar to those obtained in bacteria, at this time we cannot conclude that similar mechanisms are involved.

From Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
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