

# Fungal Genetics Reports

---

Volume 1

Article 1

---

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

W. E. Barnett

F. J. de Serres

Follow this and additional works at: <https://newprairiepress.org/fgr>



This work is licensed under a [Creative Commons Attribution-Share Alike 4.0 License](https://creativecommons.org/licenses/by-sa/4.0/).

---

### Recommended Citation

Barnett, W. E., and F.J. de Serres (1962) "Modification of EMS-induced reversion frequencies in *Neurospora* with enriched plating media," *Fungal Genetics Reports*: Vol. 1, Article 1. <https://doi.org/10.4148/1941-4765.1015>

This Research Note is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in *Fungal Genetics Reports* by an authorized administrator of New Prairie Press. For more information, please contact [cads@k-state.edu](mailto:cads@k-state.edu).

---

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

### Abstract

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

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

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

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.  
Operated by Union Carbide Corporation for the U. S. Atomic Energy Commission.

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.  
Operated by Union Carbide Corporation for the U. S. Atomic Energy Commission.