Antimetabolite inhibition of mod-5

R. W. Barratt

P. St. Lawrence

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

This work is licensed under a Creative Commons Attribution-Share Alike 4.0 License.

Recommended Citation

This Technical 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.
Antimetabolite inhibition of mod-5

Abstract
Antimetabolite inhibition of mod-5
Two aspects of the present method which make it especially useful are the time saved and the reproducibility of growth of both conidio and mycelium. Only several minutes are required to inoculate several new conidial cultures and, at the same time, 8 liters of fluid medium for mycelium production. Moreover, the mycelium was obtained regularly in a highly dispersed form (like white caterpillars) without one's having to shake the flasks vigorously at frequent intervals during the early stage of growth. This contrasted sharply with our experiences using Fernbach flasks, in which the agitation of a rotary shaker was insufficient to prevent clumping of the mycelium. Although conditions were not explored to optimize the yield of conidia, it appears that, given a large enough container to expose a vast surface of cotton, one should be able to produce within several days massive quantities of conidia for experimental purposes.

The author is indebted to Prof. F. Lynen for his support and encouragement during the course of these studies, which were carried out at the Max Planck Institute for Cell Chemistry, Munich, Germany. The author also wishes to acknowledge the financial assistance of the Alexander von Humboldt Foundation.


In 1964 St. Lawrence, Maling, Altweger and Rachmeler (Genetics 50: 1384) reported the genetics and physiology of a gene designated as mod-5 (modifier of permeability) induced in a tryp-3 (td16) stock and concluded that all of the phenotypic manifestations of the mod-5 mut-

<table>
<thead>
<tr>
<th>Strain</th>
<th>Temperature</th>
<th>p-fluorophenylalanine (conc. in µ/ml)</th>
<th>4-methyltryptophan (conc. in µ/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>wild type (isolate 2.3)</td>
<td>25°C</td>
<td>94.9 53.7</td>
<td>59.0 48.1</td>
</tr>
<tr>
<td></td>
<td>34°C</td>
<td>80.3 0.0</td>
<td>64.2 0.0</td>
</tr>
<tr>
<td>mod-5 (FGSC#1603)</td>
<td>25°C</td>
<td>90.8 86.9</td>
<td>w.2 71.1</td>
</tr>
<tr>
<td>wild type (isolate 6.1)</td>
<td>25°C</td>
<td>59.1 0.5</td>
<td>13.2 0.0</td>
</tr>
<tr>
<td>mod-5 (isolated 6.3)</td>
<td>25°C</td>
<td>51.4 0.0</td>
<td>39.4 2.3</td>
</tr>
</tbody>
</table>

Table 1. Inhibition of mod-5 by antimetabolites in cultures grown at 34°C.

Yield measured in mg dry weight. Data are averaged from triplicate flasks.

Table 2. Inhibition of mod-5 by antimetabolites in cultures grown at 25°C and 35°C.

<table>
<thead>
<tr>
<th>Strain</th>
<th>Temperature</th>
<th>p-fluorophenylalanine (conc. in µ/ml)</th>
<th>4-methyltryptophan (conc. in µ/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>wild type (FGSC#987)</td>
<td>25°C*</td>
<td>55.3 1.2</td>
<td>35.0 38.0</td>
</tr>
<tr>
<td></td>
<td>34°C</td>
<td>48.6 34.0</td>
<td>70.5 43.9</td>
</tr>
<tr>
<td>mod-5 (FGSC#1603)</td>
<td>25°C*</td>
<td>46.6 0.0</td>
<td>51.4 0.0</td>
</tr>
<tr>
<td></td>
<td>34°C</td>
<td>102.2 0.8</td>
<td>39.4 2.3</td>
</tr>
</tbody>
</table>

Yield measured in mg dry weight. *Harvested at 96 hrs.