Fungal Genetics Reports

Volume 3 Article 9

Growing Neurospora colonies attached to a glass surface in liquid medium

W. Klingmüller

Growing Neurospora colonies attached to a glass surface in liquid medium

Abstract

Growing Neurospora colonies attached to a glass surface in liquid medium

Klingmüller, W. Growing Neurospora colonies attached to a glass surface in liquid medium.

A method has been developed for growing individual colonies of Neurospora adhering to glass surfaces flooded with liquid medium. Fries minimal medium is prepared without sucrose or agar. At the same time 0.1% solutions of sorbose and fructose are prepared separately and filter-sterilized. Up to 500 conidia are added to 100 ml of the final mixed medium and the suspension is distributed into 5 petri dishes.

Growth in this medium is colonial, the colonies sticking to the bottom of the dishes, submerged in the medium. Growth is slow, depending on the strain used. With the wild type (74 A) colonies can be checked and counted after 7 days at 25°C at which time they are still very small. Mutants have been produced by nitrous acid treatment that grow faster; others, that do not grow at all.

Growth is nearly independent of the quotient fructose/sorbose in the range from 0.01% to 0.25% fructose combined with 0.1% sorbose. This is exemplified in the following table for two strains (operational numbers $S^{+}3/1$ and $S^{+}3/3$):

Strain	Conidia plated	Conidia germinated into visible colonies after 7 days, 0.1% sorbose in the medium, plus fructose				
		0.01%	0.02%	0.05%	0.1%	0.25%
$S^{+}_{3}/1$	202	-	-	-	-	-
$S^{+}_{3}/3$	282	162	181	175	158	194

Substrains have been isolated from colonies of slow and fast-growing strains. They have been re-checked on the same medium and their growth features are identical with the original strains. However, mutation to faster or slower growth occurs spontaneously. The mutation rate from slow to fast is ca. 1 in 200 germinating conidia.

The advantages of the new plating method are: 1) There are no agar-impurities or -decomposition products to be taken into account when explaining any results, 2) All colonies grow on the same level (optical level and level of oxygen tension), 3) Individual colonies can be marked microscopically at an early stage and followed through their further development, 4) The medium can be replaced or changed without difficulties, sustaining the colonies in their original position.

The disadvantages are that plates with liquid medium are not easily handled, and that growth of wild-type is slow. The peculiarities of certain mutants in these and related media are under investigation.

---Max-Planck-Institut fur Erbbiologie, Berlin-Dahlem, Ehrenbergstr. 26., Germany.