Evaluation of tobacco agar for chlamydosporulation in Candida albicans and Candida dubliniensis

Évaluation d’un milieu au tabac pour la production de chlamydosporose par Candida albicans et Candida dubliniensis

Chlamydospore production by Candida albicans has been a key phenotypic criterion in its identification from among a wide spectrum of non-C. albicans species that are increasingly observed as etiology of candidiasis in clinical practice. This phenotypic trait is now seen to be shared with the recently identified species Candida dubliniensis. C. dubliniensis was first reported in 1995 from a case of HIV related oral candidiasis and has been shown to phenotypically resemble C. albicans i.e. both produce germ tubes and chlamyospores [6]. A tobacco based medium for chlamydosporulation to differentiate C. albicans from C. dubliniensis has been earlier reported [2,3]. Following this observation we intended to compare it with a conventional medium such as corn meal agar (CMA) to study its efficacy.

We analyzed 46 clinical isolates of C. albicans and 18 reference strains of C. dubliniensis maintained in our laboratory culture collection for chlamydosporulation on tobacco agar (TA) and CMA. The species identity of these test isolates was confirmed based on characteristic colony color on CHROMagar Candida (HiMedia Laboratories, Paris), sugar fermentation and assimilation tests [4]. All isolates were freshly subcultured on sabourauds dextrose agar with chloramphenicol (50 μg ml⁻¹) prior to testing. TA was prepared as reported earlier and CMA (HiMedia Laboratories, Mumbai, India) with 1% Tween 80 was prepared as per manufacturer’s instructions. Isolates were inoculated by Dalmau technique and incubated at room temperature for up to 10 days. Plates were read microscopically at 10× and 40× for presence of chlamyospores.

Of the 46 isolates of C. albicans tested, 29 (63%) produced chlamyospores on both CMA and TA. Six isolates (13%) produced chlamyospores only on TA, whereas three isolates (6.5%) chlamydosporulated only on CMA. Eight isolates (17.4%) failed to chlamydosporulate on either media. All reference strains of C. dubliniensis chlamydosporulated on CMA and TA.

CMA has remained the most commonly employed medium for demonstration of chlamyospores in C. albicans. There are several reports of chlamydospore negative C. albicans in literature based on their failure to produce chlamyospores on CMA [1,5,7]. The findings of this report reveal that some isolates that are negative on CMA may chlamydosporulate on alternate media such as TA. Hence, we recommend usage of TA in parallel with CMA or for confirmation of isolates that are chlamydospore negative on CMA.

References


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