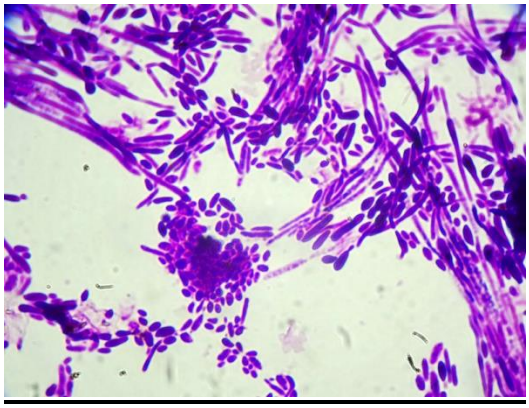
CANDIDA DUBLINIENSIS

SCIENTIFIC CLASSIFICATION	
Kingdom	Fungi
Division	Ascomycota
Class	Saccharomycetes
Order	Saccharomycetales
Family	Debaryomycetaceae
Genus	Candida
Species	C.dubliniensis



(Gram stain of Candida dubliniensis cells (1000-fold magnification))

Candida dubliniensis is a recently described species of chlamydospore- and germ tube-positive yeast which has been recovered primarily from the oral cavities of human immunodeficiency virus (HIV)-infected individuals and AIDS patients. Phenotypic characteristics.Isolates of *C.* dubliniensis grow well at 30 and 37°C on culture media routinely used to grow Candida species . Colonies formed on solid media, such as Sabouraud agar or potato dextrose agar (PDA), are a creamy white color, similar to those formed by *C.* albicans. Isolates of *C.* dubliniensis frequently appear to undergo phenotypic switching, and small petite colonies can often be observed, particularly after prolonged storage.However, unlike *C.* albicans, isolates of *C.* dubliniensis grow poorly or not at all at 42°C. Candida albicans and Candida dubliniensis are highly related pathogenic yeast species. However, C. albicans is far more prevalent in human infection

and has been shown to be more pathogenic in a wide range of infection models. Comparison of the genomes of the two species has revealed that they are very similar although there are some significant differences, largely due to the expansion of virulence-related gene families (e.g., ALS and SAP) in C. albicans, and increased levels of pseudogenisation in C. dubliniensis. Comparative global gene expression analyses have also been used to investigate differences in the ability of the two species to tolerate environmental stress and to produce hyphae, two traits that are likely to play a role in the lower virulence of C. dubliniensis. Taken together, these data suggest that C. dubliniensis is in the process of undergoing reductive evolution and may have become adapted for growth in a specialized anatomic niche. However, although C. dubliniensis is capable of producing germ tubes and true hyphae, it does so far less efficiently than C. albicans, both in vivo and under a wide range of in vitro conditions. Given the perceived importance of dimorphism in C. albicans virulence, we have previously suggested that the lower virulence of C. dubliniensis may, at least in part, be related to its relatively poor ability to switch between yeast and hyphal forms . Evidence in support of this was obtained from murine systemic infection model studies and the neonatal orogastric infection model . In the latter, stomach and kidney samples in infected animals contained only C. dubliniensis yeast cells, while C. albicans cells were found in both the yeast and hyphal forms.