

## CRYPTOCOCCUS NEOFORMANS VAR. NEOFORMANS ISOLATED IN HAVANA CITY

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Cryptococcosis, as an opportunistic infection caused by both varieties of *Cryptococcus neoformans*, is one of the mycoses whose incidence has increased greatly in the last few years, generally associated with immunosuppressive treatment and, more recently, with AIDS. Although most cases are caused by *C. neoformans* var. *neoformans* at least two cases are known to be caused by *gattii* variety in AIDS patients (G. St-Germain et al., 1988, *Eur. J. Clin. Microbiol. Infect. Dis.*, 7: 587). In 1982, K. J. Kwon-Chung et al. (*J. Clin. Microbiol.*, 15: 535) used a new culture medium known as CGB (canavanine-glycine-bromothymol blue) which allows to differentiate, with high specificity, *C. neoformans* varieties on the basis of the properties of the *gattii* variety, which is resistant to L-canavanine and uses glycine as unique source of carbon. L-canavanine, an analog of L-arginine, is a metabolic inhibitor of enzymes containing this aminoacid and alters tertiary and quaternary structures and, thus, the biologic properties of such proteins. Therefore, L-canavanine has a highly toxic effect on a wide spectrum of organisms, among them, *C. neoformans* var. *neoformans*. Various possible mechanisms of resistance of *C. neoformans* var. *gattii* to L-canavanine have been proposed; the most accepted one is the presence of a system that degrades L-canavanine into nontoxic compounds (K. J. Kwon-Chung et al., 1982, *loc. cit.*; I. Polacheck & K. J. Kwon-Chung, 1986, *Antimicrob. Agents Chemother.*, 29: 468).

By using this medium, we studied 22 strains of *C. neoformans* isolated from cerebrospinal fluids of patients admitted to Havana City

hospitals. These strains were identified as *C. neoformans* by standard methods. Known strains of the two varieties were tested as control.

The CGB medium was prepared according to K. J. Kwon-Chung et al. (1982, *loc. cit.*). The test was considered positive if the color of the medium changed from yellow-greenish (pH 5.8) to deep blue (pH > 7.0) in the first 5 days of incubation at 25-30 °C. No color change was observed on this medium with any of the 22 studied strains, so they were identified as *C. neoformans* var. *neoformans*.

Identification of *C. neoformans* varieties isolated from clinical specimens may be a useful tool for recognition of possible sources of infection as well as for therapy to be followed. H. J. Scholer (1985, *Mykosen*, 28: 5) pointed out that certain forms of cryptococcosis caused by *C. neoformans* var. *gattii* require a longer treatment than those caused by *neoformans* variety. However, other authors are of the opinion that further studies are required in order to confirm if these differences really exist in clinical manifestations and pathogenicity (P. F. Lehman et al., 1984, *J. Infect.* 9: 301; D. Nzaramba et al., 1984, *Bull. Soc. Fr. Mycol. Med.*, 13: 319).

The CGB medium is more frequently used due to its high specificity and easy preparation, and is recommended as a routine method for medical mycology laboratories (K. J. Kwon-Chung & J. E. Bennett, 1984, *Amer. J. Epidemiol.* 120: 123; D. Swinne, 1987, *Rev. Ibérica Micol.* 4: 77).