

**TITLE:** MOLECULAR IDENTIFICATION AND ANTIFUNGAL SUSCEPTIBILITY OF *CRYPTOCOCCUS NEOFORMANS* AND *CRYPTOCOCCUS GATTII* CLINICAL ISOLATES OF RIBEIRÃO PRETO – SP, BRAZIL

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**ABSTRACT:**

The genus *Cryptococcus* presents two major species that are pathogenic to humans, *Cryptococcus neoformans* and *Cryptococcus gattii*. The infection caused by these fungi can be subacute or chronic, and may affect both immunocompromised and immunocompetent individuals. With the increase of immunocompromised individuals, especially those with HIV retroviruses, the number of cryptococcosis has increased. The antifungal treatment for cryptococcosis varies according to the relationship of both the host's immune status and fungal pathogenicity. Therefore, the isolation and correct identification of these fungi is essential for a better understanding of the epidemiology, pathogenesis, virulence and antifungal susceptibility. In this work, *Cryptococcus* spp. were isolated from patients of HCFMRP-USP, between 2012 and 2017. Of a total of 111 clinical isolates, 98 were molecularly identified as *C. neoformans*, where 91 isolates are molecular type VNI, 6 VNII and 1 VNIII. Additionally, 13 clinical isolates were molecularly identified as *C. gattii* and all of which are molecular type VGII. All clinical isolates were sensitive to the antifungal agents amphotericin B, voriconazole and 5-flucytosine. Dose-dependent sensitivity (DDS) was found for the azole antifungal drugs, fluconazole and itraconazole, in which 1 *C. neoformans* and 1 *C. gattii* clinical isolates were DDS for fluconazole. For itraconazole, 8 isolates of *C. neoformans* and 6 isolates of *C. gattii* have shown DDS. Regarding the molecular types, all clinical isolates of *C. neoformans* that showed DDS are molecular type VNI and isolated from HIV positive patients, except for 1 clinical isolate from HIV negative patient and 1 from an unidentified HIV serotype patient. Among the clinical isolates of *C. gattii* that showed DDS, all are molecular type VGII and isolated from HIV-negative patients. With these data we observed that the majority of the clinical isolates were sensitive to the antifungal agents used in the treatment of cryptococcosis.

**Keywords:** *C. neoformans*, *C. gattii*, PCR-RFLP, antifungals *in vitro* susceptibility.

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