**Modulation of host innate and adaptive immune responses by *Cryptococcus* infection**

Cryptococcal disease is a fungal infection caused by two major pathogenic *Cryptococcus* species, *C. neoformans* and *C. gattii* that differ in geographical distribution and clinical characteristics. *C. neoformans* is the most common cause of mortality in immunocompromised individuals, while *C. gattii* affects mainly hosts with normal immune status. Most HIV-infected patients infected with *C. neoformans* suffer from meningitis, whereas *C. gattii* infection causes more respiratory disease and frequent neurological complications. There is little information on the influence of host immune responses by *C. neoformans* and *C. gatti* that might affect different disease outcomes. Here we demonstrated that *C. neoformans* but not *C. gattii* infection induced pulmonary inflammation, dendritic cell activation and Th1 responses. Because *Cryptococcus*-macrophage interaction is crucial in the development of cryptococcocal diseases, we further examined the differences of macrophage interaction between these species in affecting different disease outcomes. We found that *C. neoformans* isolates showed a higher phagocytosis rate than *C. gattii*. Clinical isolates of *C. neoformans* with high phagocytosis rate showed strong association with greater brain fungal burdens as well as more enhanced type-2 immune responses. These data suggest that *C. gattii* may attenuate type-1 immune response to cause infection in immunocompetent hosts. In contrast, C. neoformans may enhance type-2 immune response and exploit host macrophages to survive in the host to support fungal dissemination.