

ABSTRACT

Cryptococcus neoformans is an opportunistic pathogenic yeast causing around 600 000 deaths annually. Its ability to cause a chronic infection is given by the emergence of different morphotypes. These morphotypes differ in cell structures and mechanisms (virulence factors) which have an influence on the resistance to stress factors encountered in the host. This work first describes molecular mechanisms of formation of these virulence factors. Next, it presents morphotypes occurring during infection and the hypovirulent pseudohyphal morphotype. However, this morphotype is interesting because of a modification in the signalisation leading to its manifestation. Finally, described signalling pathways present possible ways of regulating the virulence factors, and so the manifestation of different morphotypes. Understanding these signalling pathways could ultimately lead to improving the development of new drugs, given that *Cryptococcus neoformans* is highly resistant to the existing ones.

Keywords: *Cryptococcus neoformans*, phenotypic switching, titan cells, cell differentiation, virulence, Vad1, Rim101, Usv101, RAM