



Trichosporon jirovecii infection of red swamp crayfish (*Procambarus clarkii*)

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Abstract:

One hundred and twenty-nine isolates of *Trichosporon jirovecii* were isolated from the melanized exoskeleton as well as eyestalks, gills, muscle and haemolymph of red swamp crayfish (*Procambarus clarkii*) collected from the River Nile, during summer 2015. Isolates were similar morphologically, biochemically and genetically. Also, random amplified polymorphic DNA (RAPD) analysis exhibited no polymorphism among the tested isolates. Virulence factors such as chitinase, protease, lipase activities and biofilm formation were examined. Challenge test, using a representative isolate (Tj_ASU8), proved its pathogenicity against crayfish. Magnesium oxide nanoparticles had a good antifungal activity with a minimum fungicidal concentration of 8 mg/ml. To the best of our knowledge, this is the first report for isolation of *T. jirovecii* from red swamp crayfish, showing melanization, from the River Nile. We assume that infected crayfish may act as a vector for this fungus and can disseminate infection to all susceptible hosts in the vicinity.

Keywords:

Trichosporon jirovecii *Procambarus clarkii* melanized lesions virulence factors pathogenicity

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