# Title: Quorum sensing system in *Candida parapsilosis* against *Trichophyton rubrum* and *Trichophyton mentagrophytes*

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## Abstract

Onychomycoses are nail infections predominantly caused by dermatophytes and yeasts, resulting in significant physical and psychological morbidity of the host. Failures in treatment can cause irreversible damage to the nail plate or can lead to the resistant microorganisms. The *in vitro* screening of new molecules with antifungal potential is essential for new therapeutic approaches. The present study aimed to evaluate the *in vitro* antifungal potential of the pure culture extract of *Candida parapsilosis* on *Trichophyton rubrum* and *Trichophyton mentagrophytes* strains. Strains of *C. parapsilosis*, *T. rubrum* and *T. mentagrophytes* were obtained from the collection of the Microbiology Laboratory of the School of Medicine of São José do Rio Preto, SP, Brazil. Yeast was cultured in Sabouraud Dextrose Agar (DIFCO®) and incubated at 35°C for 24 hours. After, the inoculum was prepared in 500 mL of Sabouraud Broth, incubated at 35°C for 48 hours and filtered through a millipore membrane (0.2 µm). The nonpolar compounds were separated in a mixture of the filtered inoculum (100 mL) with ethyl acetate (100 mL) as a counter phase. The minimal inhibitory concentration (MIC) were carried out with strains of *T. rubrum* and *T. mentagrophytes* following (CLSI) M38-A2 of 2008. The formula was applied to calculate the percentage inhibition: I = 1 - (AbsT - AbsCT / AbsCC) × 100 where: I = percentage inhibition; AbsT = absorbance of the inoculum extract; AbsE = absorbance of sterility control; AbsCC = absorbance of growth control.The inhibition was 100%. The MIC of the extract of *C. parapsilosis* against *T. rubrum* was 62.5 µg/mL, whereas for *T. mentagrophytes*, 1000 µg/mL. Metabolites released by *C. parapsilosis* present antifungal activity against *T. rubrum* and *T. mentagrophytes* and may compose a therapeutic strategy in the control of onychomycosis.

## Biography

PhD Margarete Teresa Gottardo de Almeida is biologist and received her Doctorate in Health Science, Medical Microbiology – Medical School of São José

do Rio Preto City –São Paulo State- Brazil. She is manager of a Medical Mycology Laboratory developing researches with pathogenic fungal. She is an adjunct professor at Medical Faculty, where she teaches medical microbiology with focus on fungal and bacterial pathogens. She is Coordinator of two Post-Graduation Courses in Medical Microbiology and Clinical Analysis (*lato sensu*), besides, she is Professor of post- graduation courses (*stricto sensu*) in Bioscience Institute, Julio de Mesquita Filho University- UNESP, and Medical Faculty. In the last 5 years, she has 21 publications (scientific journals and congress); recently she has developing projects with herbal products as potential inhibitory action against fungal cell and coating with nanocomposites and biomaterial.



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