

**Title: INHIBITORY EFFECT OF FARNESOL AGAINST *Sporothrix* COMPLEX.**

**Authors** Mendes, P.B.L.<sup>1</sup>, Andrade, A.R.C.<sup>1</sup>, Riello, G.B.<sup>1</sup>, Sales, J.A.<sup>2</sup>, Ponte, Y.B.<sup>2</sup>, Bezerra de Menezes, I.S.<sup>1</sup>, Freire, J.M.M.<sup>1</sup>, Vasconcelos, D.C.<sup>1</sup>, Bandeira, T.J.P.G.<sup>3</sup>, Brilhante, R.S.N.<sup>1</sup>

**Institution**<sup>1</sup> Specialized Medical Micology Center – Post Graduate Program in Medical Microbiology – Federal University of Ceará (Rua Coronel Nunes de Melo 1315 - Rodolfo Teófilo - 60.430.275 - Fortaleza - CE),<sup>2</sup> State University of Ceará (Av Dr Silas Muguba 1700 - Itaperi - 60.740.000 - Fortaleza - CE),<sup>3</sup> School of Medicine – Christus College, Unichristus (Rua João Adolfo Gurgel 133 - Papicu - 60.190.060 - Fortaleza - CE)

**Abstract:**

Sporotrichosis is a subacute or chronic disease caused by the dimorphic fungus *Sporothrix schenckii*. It is usually an infection limited to the skin and subcutaneous tissue, where contamination occurs mainly by traumatic inoculation of the skin. Reports indicated a possible increase in incidence in recent years. Despite the existence of effective therapies that use conventional antifungal agents against *Sporothrix schenckii*, the search for alternatives for the treatment of this disease is always relevant. With this in mind, the present study tested the efficacy of farnesol against the strains belonging to the *S. schenckii* complex. Susceptibility to farnesol was tested against *Sporothrix* complex: *S. schenckii* (n=6), *S. brasiliensis* (n=26), *S. mexicana* (n=5) e *S. globosa* (n=3). Strains were isolated from clinical, animal and environmental sources. For this analysis, susceptibility tests were performed according to M38-A2, standardized by the Clinical Laboratory Standards Institute (CLSI). Farnesol was diluted in DMSO, in concentrations ranged from 0.0078 µM to 150 µM. Plates were incubated in 35°C during 72h. Interpretation of the results was done by visual observation of the Minimum Inhibitory Concentration (MIC) of 80% of growth inhibition, compared to control. Farnesol inhibit *Sporothrix* complex, with MIC ranges from 0.0078 µM to 0.25 µM for *S. brasiliensis*. Five strains of *S. mexicana* showed MIC range of 0.0156 µM to 0.5 µM. Regarding the specie *S. schenckii*, strains had MIC ranges of 0.0312 µM to 1.0 µM. To the strains of *S. globosa*, MIC ranges were from 0.0312 µM to 0.25 µM. From the MICs found, was assessed the Minimum Fungicidal Concentration (MFC), and observed that the concentration needed to prevent, in full, the growth of the all strains varied in the range from 0.0312 µM to 4.0 µM. Given the above results, this study reports knowledge about the antifungal properties of farnesol as well as broaden the outlook of alternative therapies for sporotrichosis.

**Keywords:** *Sporothrix* spp., Susceptibility, Farnesol.

**Aknowledgments:** CNPQ, CAPES, FUNCAP