

عنوان مقاله:

Antifungal activity of green-synthesized curcumin-coated silver nanoparticles alone and in combination with fluconazole and itraconazole against *Candida* and *Aspergillus* species

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خلاصه مقاله:

Background and Purpose: Regarding the wide-spectrum antimicrobial effects of curcumin and silver, this study aimed to evaluate the antifungal activity of green-synthesized curcumin-coated silver nanoparticles (Cur-Ag NPs) against a set of *Candida* and *Aspergillus* species. **Materials and Methods:** Cur-Ag NPs were synthesized by mixing 200 μ L of curcumin solution (40 mM) and 15 mL of deionized water. The mixture was stirred for 3-5 min, followed by the addition of 2.5 mL of silver nitrate solution (2.5 mM). The resulting solution was incubated for 3 days. Antifungal susceptibility of 30 fungal isolates of *Aspergillus* and *Candida* to fluconazole and itraconazole, as well as the activity of Cur-Ag NPs against the isolates, were determined, both alone and in combination, using broth microdilution according to the Clinical and Laboratory Standards Institute guidelines. **Results:** Cur-Ag NPs demonstrated promising antifungal activity, particularly against *Candida* species. The geometric mean value of the minimum inhibitory concentration of Cur-Ag NPs was significantly lower than that of fluconazole for all the studied fungi. Similarly, it was lower than those of itraconazole in *C. albicans* and *A. fumigatus*. The minimum fungicidal concentrations of Cur-Ag NPs were markedly better than those of fluconazole but still inferior to those of itraconazole. **Conclusion:** Cur-Ag NPs demonstrated indisputable antifungal activity and great potential that can be harnessed to combat fungal infections, particularly those caused by azole-resistant strains of *Aspergillus* and *Candida*.

