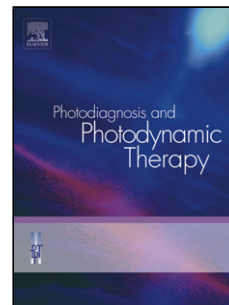


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Highlights

- aPDT is efficacy to inhibit the dimorphic fungi *H. capsulatum*, causing a minimal of damage to host cells.
- The functionalization of chalcones with OH contributed to increase the efficiency of aPDT against *H. capsulatum*
- The CH2 at $7.81 \mu\text{g mL}^{-1}$ associated to 24 J cm^{-2} light dose was capable to reduce 100% of *H. capsulatum* while was necessary 8 times of CH1 concentration to inhibit 95% of this fungus at same aPDT conditions.

Selective photoinactivation of *Histoplasma capsulatum* by water-soluble derivatives chalcones

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BACKGROUND

Histoplasmosis is a fungal infection caused by the dimorphic fungus *Histoplasma capsulatum* [1]. Depending host immunity the disease can affect organs phagocytic mononuclear system such as spleen and liver [2, 3], as well as can develop oral and tissue lesions [4]. The treatment of histoplasmosis can be performed with itraconazole, fluconazole, and in the disseminated forms is used amphotericin B [5]. However, have been reported the appearance of fluconazole-resistant strains [6, 7], cases of failure with itraconazole therapy [8] and it is well known that amphotericin B cause several side effects, nephrotoxicity and hepatotoxicity [9]. So, these current problems of histoplasmosis therapies make urgent the development of new strategies to treat this disease. Antimicrobial photodynamic therapy (aPDT) seems to be a potential candidate once have been show effectively to kill different species of fungi, causing minimal damage to host cells [10, 11].

AIMS

Several photosensitizers (PSs) have been investigated for aPDT applications in the treatment and control of yeasts, including chalcone that show a high quantum yield of

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