Candidiasis

Methodological Approach

Objective: To evaluate the in vivo effectiveness of a marine invertebrate candidate due to C. albicans.

Methods: Treatment with ATTAF-1 and ATTAF-2 significantly increased the survival of infected mice compared to the control group (5% BMD± p<0.001).

Conclusion: Although the antifungal action of ATTAF-1 and ATTAF-2 and their median survival time provided no evidence of a difference versus fluconazole. Although there was an obvious fungal load (mean log CFU of tissue) decrease by ATTAF-1 and ATTAF-2 in the kidney, spleen, and liver of the treated mice in comparison with the control group and not similar to each other in samples, fluconazole showed a decrease in the number of fungal loads, similar to the group treated with ATTAF-1 and ATTAF-2. Nevertheless, the results of this study indicate that the use of ATTAF-1 and ATTAF-2 as a therapeutic agent can significantly improve in vitro and in vivo antifungal effects against C. albicans, increasing animal survival and significantly decreasing fungal loads.

Conclusion: Although we have identified two new compounds, ATTAF-1 and ATTAF-2, as novel promising Candidates for the treatment of Candida infections, more studies of ATTAF-1 and ATTAF-2 activity and their actions in animal models are warranted to understand our enhancement and establish their efficacy.

Candida albicans is the most common cause of nosocomial bloodstream infections and are associated with substantial mortality and morbidity in immunocompromised individuals. However, limited therapeutic approaches against these candida species are available. The in vitro antifungal resistance highlighted the need to develop new therapeutic options for novel treatment strategies to combat later infections. A novel compound ARV-1, 2, 4-m Undecyl-3, 5- rhamnose, fluconazole, cladosporium alcohol derivative, with potent in vitro activity against Candida species, including azole-resistant isolates. The novelty of this study was to further evaluate the in vivo effectiveness in a marine model of invertebrates candidate due to C. albicans.

Methods: Treatment with ATTAF-1 and ATTAF-2 significantly increased the survival of infected mice compared to the control group (5% BMD± p<0.001).

Results: The antifungal action of ATTAF-1 and ATTAF-2 and their median survival time provided no evidence of a difference versus fluconazole. Although there was an obvious fungal load (mean log CFU of tissue) decrease by ATTAF-1 and ATTAF-2 in the kidney, spleen, and liver of the treated mice in comparison with the control group and not similar to each other in samples, fluconazole showed a decrease in the number of fungal loads, similar to the group treated with ATTAF-1 and ATTAF-2. Nevertheless, the results of this study indicate that the use of ATTAF-1 and ATTAF-2 as a therapeutic agent can significantly improve in vitro and in vivo antifungal effects against C. albicans, increasing animal survival and significantly decreasing fungal loads.

Conclusion: Although we have identified two new compounds, ATTAF-1 and ATTAF-2, as novel promising Candidates for the treatment of Candida infections, more studies of ATTAF-1 and ATTAF-2 activity and their actions in animal models are warranted to understand our enhancement and establish their efficacy.
