

عنوان مقاله:

Biological Activity and GC-MS/MS Analysis of Extracts of Endophytic Fungi Isolated from *Eichhornia crassipes* (Mart.) Solms

محل انتشار:

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خلاصه مقاله:

Introduction: Endophytic fungi are good sources of bioactive compounds that are exclusive to their hosts. *Eichhornia crassipes* plant produces different bioactive compounds. The aim of the present study is to isolate and identify endophytic fungi that reside in *Eichhornia crassipes* tissues, and to evaluate the biological activities of their extracts. **Materials and Methods:** Endophytic fungal spp. were isolated from leaves and petioles of *Eichhornia crassipes*, identified and then extracted. The ethyl acetate extracts were tested against bacteria, fungi, hepatitis B virus and *Schistosoma mansoni* cercariae. The chemical composition of these extracts was determined by Gas chromatography-mass spectrometry (GC- MS/MS) analysis. **Results:** We found that four fungal spp. were dominant in *Eichhornia crassipes*; they were molecularly identified as *Aspergillus flavus* OM7581315, *Aspergillus fumigatus* OM688980, *Aspergillus welwitschiae* OM7581326 and *Corynascus sepedonium* OM6889206, with *A. flavus* as the most frequent. The ethyl acetate extract of the four fungal spp. showed pronounced antimicrobial effects, whereas the highest antiviral effect on hepatitis B virus was that of *A. flavus* followed by *A. fumigatus* extracts. All the tested extracts were cercaricidal to *Schistosoma mansoni* cercariae, where *A. flavus* was the most effective. GC- MS/MS analysis indicated the presence of various bioactive compounds. **Conclusions:** *Aspergillus flavus*, *Aspergillus fumigatus*, *Aspergillus welwitschiae* and *Corynascus sepedonium* as endophytes of *Eichhornia crassipes* showed promising antimicrobial, antiviral and cercaricidal properties.

کلمات کلیدی:

Antiviral, *Aspergillus*, cercaricidal, *Eichhornia crassipes*, Endophytes, GC-MS/MS

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