Botryorhodines A-D, antifungal and cytotoxic depsidones from *Botryosphaeria rhodina*, an endophyte of the medicinal plant *Bidens pilosa*.

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Abstract

An endophytic fungus (*Botryosphaeria rhodina*) was isolated from the stems of the medicinal plant *Bidens pilosa* (Asteraceae) that is known for its anti-inflammatory, antiseptic and antifungal effects. The ethyl acetate extract of the fungal isolate exhibits significant antifungal activity as well as potent cytotoxic and antiproliferative effects against several cancer cell lines. Activity-guided fractionation resulted in the isolation of a complex of four depsidones, botryorhodines A-D and the auxin indole carboxylic acid. Botryorhodine A and B show moderate to weak cytotoxic activities against HeLa cell lines with a CC(50) of 96.97 microM and 36.41 microM, respectively. In addition, they also show antifungal activity against a range of pathogenic fungi such as Aspergillus terreus (MIC 26.03 microM for botryorhodine A and 49.70 microM for B) and the plant pathogen Fusarium oxysporum (MIC 191.60 microM for botryorhodine A and 238.80 microM for B). A potential role of the endophyte in modulating fungal populations living within or attacking the host plant is discussed.

Beteiligte Forschungseinheiten

Biomolekulare Chemie Christian Hertweck Mehr erfahren

Leibniz-HKI-Autor*innen



Hans-Martin Dahse

Details



Christian Hertweck

Details



Kirstin Scherlach

Details

Identifier

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