Gliotoxin- bane or boon?

Scharf DH, Brakhage AA, Mukherjee PK (2016) Gliotoxin- bane or boon? *Environ Microbiol* 18(4), 1096-1109. (Review)

Details

Abstract

Gliotoxin (GT) is the most important epidithiodioxopiperazine (ETP)-type fungal toxin. Gliotoxin was originally isolated from Trichoderma species as an antibiotic substance involved in biological control of plant pathogenic fungi. A few isolates of gliotoxin-producing Trichoderma virens are commercially marketed for biological control and widely used in agriculture. Furthermore, gliotoxin is long known as an immunosuppressive agent and also reported to have anti-tumor properties. However, recent publications suggest that gliotoxin is a virulence determinant of the human pathogen Aspergillus fumigatus. This compound is thus important on several counts - it has medicinal properties, is a pathogenicity determinant, is a potential diagnostic marker and is important in biological crop protection. The present article addresses this paradox and the ecological role of gliotoxin. We discuss the function of gliotoxin as defense molecule, the role in aspergillosis and suggest solutions for safe application of Trichoderma-based biofungicides.

Beteiligte Forschungseinheiten

Molekulare und Angewandte Mikrobiologie Axel Brakhage Mehr erfahren

Leibniz-HKI-Autor*innen



Axel A. Brakhage

Details



Daniel H. Scharf

Details

Identifier

doi: 10.1111/1462-2920.13080

PMID: 26443473