Epidithiodiketopiperazine biosynthesis: A four-enzyme cascade converts glutathione conjugates into transannular disulfide bridges.

Scharf DH, Chankhamjon P, Scherlach K, Heinekamp T, Willing K, Brakhage AA, Hertweck C (2013) Epidithiodiketopiperazine biosynthesis: A four-enzyme cascade converts glutathione conjugates into transannular disulfide bridges. *Angew Chem Int Ed* 52(42), 11092-11095.

Details

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Abstract

Enzyme quartet: Isolation of the first sulfur-bearing intermediate of the gliotoxin pathway in Aspergillus fumigatus and successful in vitro conversion of the bisglutathione adduct into an intact epidithiodiketopiperazine by a four-enzyme cascade (including glutamyltransferase GliK and dipeptidase GliJ) revealed an outstanding adaptation of a primary metabolic pathway into natural product biosynthesis that is widespread in fungi.

Beteiligte Forschungseinheiten

Biomolekulare Chemie Christian Hertweck Mehr erfahren

Molekulare und Angewandte Mikrobiologie Axel Brakhage Mehr erfahren

Biotechnikum Miriam Agler-Rosenbaum Mehr erfahren

Leibniz-HKI-Autor*innen



Axel A. Brakhage

Details



Pranatchareeya Chankhamjon

Details



Thorsten Heinekamp

Details



Christian Hertweck

Details



Daniel H. Scharf

Details



Karsten Willing

Details

Identifier

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