

863课题进展

枯草芽孢杆菌BAB-1脂肽类化合物的分离及稳定性分析

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摘要:

枯草芽孢杆菌菌株BAB-1是一株高效防治番茄灰霉病的生防细菌。通过盐酸沉淀、甲醇萃取的方法,从该菌株的发酵上清液中提取出一种脂肽类化合物。该物质能够显著抑制番茄灰霉菌菌丝生长及分生孢子的萌发,孢子萌发抑制率为83.02%。抑菌谱试验表明该物质对多种植物病原真菌具有明显的抑制作用。此外,该抑菌物质对热稳定,能耐受较广的pH范围,对多种蛋白酶不敏感,在几种常用有机溶剂中保持抑菌活性基本不变。结果表明枯草芽孢杆菌菌株BAB-1产生的脂肽类物质性质稳定,具有较强的抑菌作用。

关键词: 枯草芽孢杆菌;脂肽;番茄灰霉菌;稳定性

Isolation and Stability Analysis of Lipopeptides Produced by *Bacillus subtilis* strain BAB-1

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Abstract:

Bacillus subtilis strain BAB-1 exhibited significant inhibitory activity against *Botrytis cinerea* which caused tomato gray mold. An antimicrobial substance of lipopeptides were isolated from the suspension of strain BAB-1 by hydrochloric acid precipitation and methanol extraction. The extracted lipopeptides showed effective inhibitory activity against the mycelia growth and spore germination of *Botrytis cinerea*. The spore germination inhibition rate was 83.02%. Antimicrobial spectrum tests showed that the substance had inhibitory effect on a variety of plant pathogenic fungi. In addition, the substance was stable to high temperature with wider pH range, insensitive to multiple proteases. It maintained antimicrobial activity in several common organic solvents. The results showed that the lipopeptides produced by *Bacillus subtilis* BAB-1 had a stable property and a strong antimicrobial effect.

Keywords: *Bacillus subtilis* lipopeptide *Botrytis cinerea* stability

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