

基础研究和新技术

# 气相色谱-飞行时间质谱用于转Bt基因水稻代谢轮廓分析

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## 摘要

关键词

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## Metabolic Profiling of Transgenic Rice with Bt Gene Using Gas Chromatography Time-of-Flight Mass Spectrometry

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## Abstract

A metabolomic method based on gas chromatography-time-of-flight mass spectrometry(GC-TOFMS) was established for the comparative analysis of transgenic and non-transgenic rice seed to identify changes of endogenous metabolites in relation to gene modification. Insect resistant rice with foreign Bt gene and three non-transgenic rice of different genotypes were studied to display the influence of biotechnology and genetic background. Metabolic profiling data collected from GC-TOFMS was further performed with orthogonal signal correction-partial least squares analysis (OSC-PLS) to pick out the differentiations. Both genotype and gene manipulation remarkably impacted on the metabolic phenotype. Bt rice and its parent were different in some compounds including fructose, proline, tryptophan, malic acid, citric acid, tetradecanoic acid, etc.

**Key words** [transgenic](#) [rice](#) [Bt gene](#) [genotype](#) [metabolic profiling](#)

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