



## 福建金线莲与菌根真菌互作过程中的蛋白质组研究

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中文摘要: 目的: 通过蛋白质组差异研究菌根真菌促进植物生长的机制。方法: 采用蛋白质双向电泳结合MALDI-TOF/TOF质谱方法研究了接种菌根真菌*Epulorhiza* sp.的福建金线莲的蛋白质组。结果: MALDI-TOF/TOF质谱分析了27个差异蛋白点, 在数据库中以绿色植物为检索范围, 确定了22个差异蛋白, 功能大多涉及糖物的信号传导、代谢调节等, 光合作用及物质代谢中的功能蛋白及酶类等也有涉及。结论: 菌根真菌通过影响植物的调控系统作用于植物, 积极的调控使得植物物质代谢、光合作用等增强, 进而表现出植株健壮、抗性增强, 研究还表明植物与菌根真菌互作时可能发生某些基因的沉默。

中文关键词: 金线莲 菌根真菌 蛋白质组 双向电泳

Proteome analysis on interaction between *Anoectochilus roxburghii* and Mycorrhizal fungus

**Abstract: Objective:** To study the mechanism of plant growing promoted by Mycorrhizal fungus through the difference of proteomes.

**Method:** The differential proteomes between uninoculated and inoculated endophytic fungi, *Epulorhiza* sp. on *Anoectochilus roxburghii* were analyzed by two-dimensional gel electrophoresis and MALDI-TOF/TOF mass spectrum. **Result and Conclusion:** Twenty-seven protein spots were analyzed by matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI-TOF-MS). Twenty-two candidate proteins were identified by database comparisons. The function of these proteins mostly involved in signal transduction, metabolic regulation, as well as photosynthesis and substance metabolism. The results indicate that the regulator control system of plant is influenced by fungi action, and the positive regulation improves substance metabolism and photosynthesis, which results in strong plant and higher resistance. It is also deduced that silent genes may exist in endosymbiosis plants.

**keywords:** *Anoectochilus* endophytic fungi proteome 2D gel electrophoresis

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