

# 杨树与溃疡病菌 (*Botryosphaeria dothidea*)

## 互作中次生代谢及蛋白质组表达的研究

理永霞<sup>1</sup>, 吕全<sup>1</sup>, 刘振宇<sup>2</sup>, 梁军<sup>1</sup>, 贾秀贞<sup>1</sup>, 张星耀<sup>1\*</sup>

(1. 中国林业科学研究院森林生态环境与保护研究所, 国家林业局森林保护学重点实验室, 北京 100091; 2. 山东农业大学植物保护学院, 泰安 271018)

**摘要:** 杨树溃疡病是引起杨树枝干皮层局部坏死的病害, 目前已成为我国杨树人工林发展的主要障碍之一。有关杨树的抗病机制, 一些学者进行了大量的研究, 在寄主诱导抗病机制和病原菌的致病机制研究取得了一系列研究成果。但鉴于互作系统本身的复杂性, 要想深入探究植物与病原菌互作的响应机制, 阐明其中蕴含的分子机理, 需要进一步深入开展关于基因调控机理、蛋白质表达模式和功能、及次生代谢种类和变化等方面的研究。大量研究也表明, 植物的抗病性决定于体内抗病基因的存在和这些基因表达的速度、程度以及基因表达所产生的抗病物质的量, 而蛋白质的差异表达和次生代谢产物的种类和含量变化正是基因表达的速度、程度的体现。为了进一步阐明杨树与溃疡病菌互作分子机制, 本文对感、抗因杨树受溃疡病菌侵染后次生代谢和蛋白质组表达进行了研究。

## Secondary metabolite and Proteome expression of Poplar-Canker Pathogen Interaction

LI Yongxia<sup>1</sup>, Lü Quan<sup>1</sup>, LIANG Jun<sup>1</sup>, LIU Zhenyu<sup>2</sup>, JIA Xiuzhen<sup>1</sup>, ZHANG Xingyao<sup>1\*</sup>

(1. Institute of Forest Ecology Environment and Protection, Chinese Academy of Forestry, Beijing 100091, China; 2. College of Plant Protection, Shandong Agricultural University, Taian 271018, China)

Poplar canker is one of disease which caused the stems cortical necrosis, the disease is one of the main obstacles for the development of poplar plantation in our country. There has been a large amount of research about the disease-resistant mechanism of poplar to canker and get a series of research progress in the induced resistant mechanism of host and pathogenic mechanism of pathogens. But the mechanism of interaction of plant-pathogen is very complexity. For probing the response mechanism of poplar to *Botryosphaeria dothidea*, there are lots of further research

needed to do, especially in the regulation mechanism of gene, the expression mode and functional classification of protein, the type and content changes of secondary metabolites. A number of research also indicated that the plant resistance depends on the existence of resistant genes, the speed and extension of gene expression, and the amount of disease-resistant substances which produced from the gene expression. And the different expression proteins and the contents and varieties reflect the speed and level of gene expression. In order to further understand molecular mechanism of the interaction between poplar-*B. dothidea*, this paper researched vary contents of secondary metabolites and different expression proteins of poplars infected with *B. dothidea*.