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观赏植物

转新疆野生樱桃李*psoRPM1* 基因烟草抵抗南方根结线虫

李芳, 朱翔, 乔峰, 陈雪峰, 李虎, 胡建芳

（中国农业大学农学与生物技术学院，北京 100193）

psoRPM1 Gene from Prunus sogdiana Indicated Resistance to Root-knot Nematode in Tobacco

LI Fang, ZHU Xiang, QIAO Feng, CHEN Xue-Feng, LI Hu, HU Jian-Fang

(College of Agronomy and Biotechnology, China Agricultural University, Beijing 100193, China)

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摘要 从新疆野生樱桃李（*Prunus sogdiana*）抗南方根结线虫单株中分离克隆得到一个能响应南方根结线虫侵染的抗病基因*psoRPM1*，利用农杆菌介导方法将其导入烟草中，并对其抗性进行了鉴定。结果显示，构建的*pCAMBA1305.1* 表达载体能成功地将psoRPM1 基因导入高度感病的烟草‘W38’中，并获得了9 株转基因单株。对转基因单株进行抗性鉴定，结果显示转入psoRPM1 基因后使烟草‘W38’对南方根结线虫的抗性由高度感病变为中度抗病。这一结果预示着*psoRPM1* 基因可能是一个新的与抗根结线虫相关的基因。

关键词： 新疆野生樱桃李 根结线虫 *psoRPM1* 基因 转基因

Abstract: The root-knot nematode, especially Meloidogyne incongnita is one of the most harmful pests could induce many crop diseases. Xinjiang wild cherry plum (*Prunus sogdiana*) is a kind of wild and endemic specie in China with significant resistant effect against *M. incognita*. Here we isolated a gene from Xinjiang wild cherry plum, which named *psoRPM1*, having responses to the infection of M. incognitain the resistant plant. Using Agrobacterium-mediated transgenic technology, psoRPM1 gene was introduced into tobacco varieties ‘W38’, which is highly susceptible to M. incognita. Then the transgenic tobaccos and plants of control group were inoculated with M. incognita. After growing for 60 d, the psoRPM1-W38 showed varying degrees of resistance to M. incognita, even some of the plants nearly had no root-knots. Comparing to the tobaccos of the control group, it is suggested that psoRPM1 gene is capable of helping the tobacco ‘W38’ set up resistance mechanism against the infection of M. incognita and finally predict the psoRPM1 is a new root-knot nematode resistance gene candidate.

Keywords: *Prunus sogdiana*, root-knot nematode, *psoRPM1* gene, transgenic

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