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Identification of Randomly Amplified Polymorphic DNA Markers Linked to the Gene for Anthracnose Resistance in Grapes

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Objectives

Anthracnose disease is one of the most important diseases in Grapevine(*Vitis* spp.). The pathogenic fungus attacks all aerial parts of the vine and overwinters in dead canes and fruits, making control very difficult. The aim of this study was developing molecular marker linked to resistance gene for early selection of anthracnose resistance lines of grapevine.

Materials and Methods

1. Material : Grape anthracnose resistant line-11 lines
   Grape anthracnose susceptible line-9 lines
2. Methods : 1) RAPD(Random Amplified Polymorphic DNA)
   2) Cloning, PCR-Southern and Sequencing
   3) STS primer design
   4) Primer sensitivity test

Results and Discussion

○ RAPD analysis using 107 primer revealed 5 RAPD markers(URP6, OPB15, OPB17, OPAB14, OPAB18) in resistant lines.

○ The band amplified by the primer URP6-1200bp, OPB15-1500bp, OPAB18-1000bp was excised, cloned, sequenced.

○ From the sequencing data, STS primers were were synthesized and tested in various combination.

○ Amplification product of OPB15-1500bp and URP6-1200bp were strongly linked to anthracnose resistant gene because a single band was produced in the resistant genotype.

포도 새눈무늬병 저항성 유전자와 연관된 DNA 마커 선발

최근 국내에서 포도 재배 시 포도 새눈무늬병의 발생이 증가하면서 주요한 포도 병해 중의 하나로 부각되어 이에 대한 저항성 품종을 효과적으로 육성할 수 있도록 분자표지인자를 개발하고자 수행하였다. 포도 새눈무늬병 저항성의 유전분석을 위해 기 작성된 저항성과 이병성 개체의 bulk DNA 에서 저항성 개체에서만 밴드가 출현하는 primer 는 107 개 중에서 URP6, OPB15, OPB17, OPAB14, OPAB18 이었다. 이들 밴드를 이용하여 PCR-Southern 으로 저항성과 이병성 개체별로 확인한 결과 3 개의 primer(URP6, OPB15, OPAB18)에서 출현한 밴드만이 저항성 표지인자를 확인할 수 있었다.

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