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Screening of anthracnose resistant lines of grapevine germplasm in Korea & selection of AFLP markers by using its

Gi Hoon Kim, Jin Heui Park, Hae Keun Yun[1)], Il Sup Nou[2)], Kwon Kyoo Kang

Department of Horticulture, Hankyong National University, 67 Seokjeong-dong, Anseong city, Gyeonggi-do 456-749, Korea[1)] National Horticultural Research Institute, RDA, Suwon 440-706, Korea [2)] Department of Horticulture, Sunchon National University, Sunchon 540-742, South Korea.

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. Plant materials : Grapevine germplasm (600 lines)
2. Methods:

1) Screening of Anthracnose resistant lines

- Leaves of each grapevine germplasm were infected Anthracnose disease (*E. ampelina* strain EA-1)

2) Selection of AFLP markers

- Extraction of genomic DNA : The genomic DNA was extracted from leaves
- Digestion of genomic DNA by *Eco*R1 and *Mse*1 and adapter ligation
- Pre-selective amplification and selective amplification
- Acrylamide gel electrophoresis and silver staining
- Sequencing and conversion of AFLPs to sequence-specific PCR marker
- PCR amplification and electrophoresis

Results and Discussion

To Screening of Anthracnose resistant lines, Leaves obtained from grapevine germplasm (600 lines) were infected Anthracnose disease (*E. ampelina* strain EA-1). Two or three days after inoculation were selected resistant lines. In order to select AFLP markers, we used several combinations of primer pairs, EcoR1+AC/Mse1+CTG, EcoR1+AT/Mse1+CTT, EcoR1+ACA/Mse1+GTT and EcoR1+TA/Mse1+GTT. These results obtained specific bands to Anthracnose among resistant and susceptible line. We carried out sequencing of these bands and the specific primer designed from the sequences of AFLP primers. From these results that AFLP analysis is capable of differentiating grape anthracnose resistant line and grape anthracnose susceptible line.

* *Corresponding author* : Kwon-Kyoo Kang, TEL: 031-670-5104, E-mail: kykang@hknu.hankyong.ac.kr