

OA8. Application of PCR-based markers linked to the *Pi5* locus on the disease evaluation of *Magnaporthe grisea* isolate PO6-6 in rice

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Objectives

This study was conducted to apply PCR-based markers linked to the *Pi5* locus on the disease evaluation of *M. grisea* isolate P06-6 using korean rice varieties.

Materials and Methods

PCR markers(below), Rice varieties : 186 rice variety and elite lines from NYAES crossing block

Marker	Forward primer (5'→3')	Reverse primer (5'→3')
2p10r	ATTGTCAAGCTCTTCTGCTGTC	TGAACTGATCATCAAATCAATC
C1454	CACCTGAAGGCTGAAAATCTGAAT	CCGTTGATAGCGCTTAATGTTCTT
S04G03	CTTAACAATCAATGTTTAATGAAA	GTTATATTATACTAATTGTTTATC
JJ80	TTATGAGATTAGGAGTGTAT	ATGTAAAGGCAAAGCTGAT
JJ81	AAGCTTATTCCTCCATTTC	AGCGAAAATCATTATCACA
JJ113	CTCTTGGTGATCTTTGTTAC	GGATGATGTGATCTGCAGAG

Result and Discussion

Six DNA markers were developed from the BAC subclones, which localize *Pi5(t)* on the RIL249/CO39 map(MGG *in press*). Three out of six DNA markers, 2p10r, C1454 and S04G03, produced a mono morphic band in all tested varieties. 34 out of 186 varieties amplified by the PCR markers, JJ80, JJ81, and JJ113 simultaneously. The disease evaluation of these 34 varieties showed resistance response on the inoculation of *M. grisea* isolate P06-6 at seedling stage. The results suggest that PCR markers, JJ80, JJ81, and JJ113 might be applied as DNA markers for MAS(Marker Aided Selection) in rice breeding.

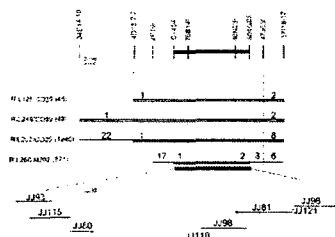


Fig. Genetic and physical maps of the *Pi5(t)* locus on rice chr.9.

Table. *M. grisea*(Po6-6) response of 34 varieties selected by PCR marker.

Variety	Blast	Variety	Blast	Variety	Blast	Variety	Blast
Ansanbyeo	R	Manchubyeo	R	Aya	R	Hwacheong wx	R
Beakjinjubyeo	R	Mangeumbyeo	R	CPSLO 17	R	IR 72	R
Heughyangbyeo	R	Nampyeongbyeo	R	Dondokui	R	IR68997	R
Hwacheongbyeo	R	Seolgaengbyeo	R	Fuke 166	R	IR841-76-1	M
Ilpumbyeo	R	Shinkeumbyeo	R	Guichao 2	R	Jahyangdo	R
Jinbupalbyeo	R	Sobibyeo	R	Hitomebore	R	Jouiku 414	R
Jinmibyeo	R	Taebaegbyeo	R	Hoshinoyume	R	Lemont	R
Joryeongbyeo	R	Yeongnambyeo	R	Hoshiyudaka			
Mananbyeo	R	Akidagomachi	R	Hwacheong du-6			

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