

Dual gene expression cassette is superior than single gene cassette for enhancing sheath blight tolerance in transgenic rice

Subhasis Karmakar¹, Kutubuddin A. Molla^{1,2}, Kaushik Das¹, Sailendra Nath Sarkar¹, Swapan

K. Datta^{1,4} & Karabi Datta^{1,*}

*(Corresponding author)

Supplementary Table.1 List of primers used in PCR screening of transgenic plants

Gene	Primer sequence (from 5'- 3')	Amplicon size	Annealing temperature
<i>OsCHI1</i>	F-TCGCCTCCATCATATCGCCCTC R-CGTCATCCAGAACCAGAACGCC	490bp	53°C
<i>AtNPR1</i>	F-ATGGACACCACCATTGATGG R-TCACCGACGACGATGAGAGAG	1.7 kbp	58.1°C
<i>HPT</i>	F-CGCCGATGGTTTCTACAAAGA R-TCAATGACCGCTGTTATGCG	495 bp	58.6°C
<i>NOS</i>	F-GGTACCGATCGTTCAAACATTTGGC R-GAATTCCCGATCTAGTAAC	260 bp	50°C

Supplementary Table. 2 Primers for quantitative real-time polymerase chain reaction (qRT-PCR).

Gene	Primer sequence (5'-3')	Accession number	Amplicon size (bp)	T _m of amplicon
<i>OsCHI11</i>	F-GTTCTGGTTCTGGATGACGC R- GCCGTTGATGATGTTGGTGA	X54367	139	87.50
<i>AtNPR1</i>	F- CATTCTCTCAAAGGCCGACT R-AAGACGTTGAGCAAGTGCAA	NM_105102	159	80.00
<i>OsPAL/ZB8</i>	F-GTGTCTGCGAGGTGATGAA R-TTCCCTCCAAGATGTGCTTC	X87946.1	118	81.00
<i>OsNHI</i>	F-TGAAAGAAGGGACCCACAAC R- AGGTGGATTTGCACCAGAAC	GU722160	202	78.50
<i>RC24</i>	F-TCTGCTGCAGCCAGTAC R-GGAGAAGCATCTGGTCGAAG	X87109.1	174	79.00
<i>OsPR5</i>	F-GCCACTTCTTCCGCTATCCT R -CACGTTGATGGTCCACGTAT	X68179	174	81.50
<i>OsAOS2</i>	F-AAGAAGGGGGAGATGCTGTT R-TGCTTGTTGTCAACGCTAGG	AY055775.1	182	79.50
<i>OsMAPK6</i>	F-TATGTGCACTCGGCAAATGT R-TCGATACCAACGAGTGACCA	AB183398	156	82.00
<i>OsPR10a</i>	F- AGCTGGCCATTGCTTTGG R-GCTTCGTCTCCGTCGAGTGT	AF274850	65	79.00
<i>OsPR1b</i>	F-AGCTGGCCATTGCTTTGG R-CGTTGTGGAGCCTCACGTAGT	EF061247	90	80.50
<i>β-tubulin</i>	F-GGAGTCACATGCTGCCTAAGGTT R-TCACTGCCAGCTTACGGAGG	X78143	64	77.50

Supplementary Table.3 Relative fold change of endogenous *PR* marker, defense related, JA and SA pathway genes in qRT-PCR after 24 and 48hr post infection

Relative fold change																
	<i>OsPR5</i>		<i>OsMAPK6</i>		<i>OsNHI</i>		<i>OsPR10a</i>		<i>OsPR1b</i>		<i>OsAOS2</i>		<i>OsPAL</i>		<i>RC24</i>	
	24h	48h	24h	48h	24h	48h	24h	48h	24h	48h	24h	48h	24h	48 h	24h	48h
Transgenic lines																
CN5-2-1	1.15	0.90	0.92	1.05	8.46	3.87	3.34	2.78	1.21	2.17	1.57	3.23	1.14	1.36	0.73	3.63
C8-9-1	0.54	0.64	0.44	0.65	3.46	2.04	2.52	2.06	0.65	1.04	1.71	2.37	0.60	0.77	0.28	2.41
N4-3-2	0.78	0.64	0.51	1.01	4.96	2.48	2.18	2.34	0.92	1.87	1.57	3.25	1.49	1.85	0.37	1.63

