

Molecular mechanisms underlying the function of *Magnaporthe oryzae* AvrPib as revealed by population genetic, comparative genomic and mutagenic approaches

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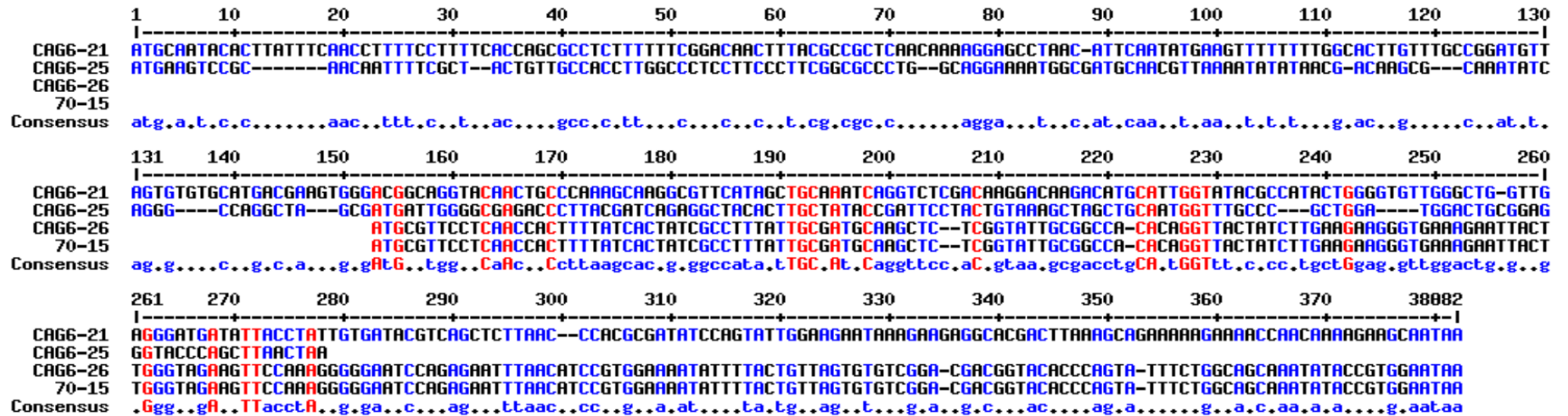


Figure S1 Alignment of the CDSs of three candidate *AvrPib* genes.

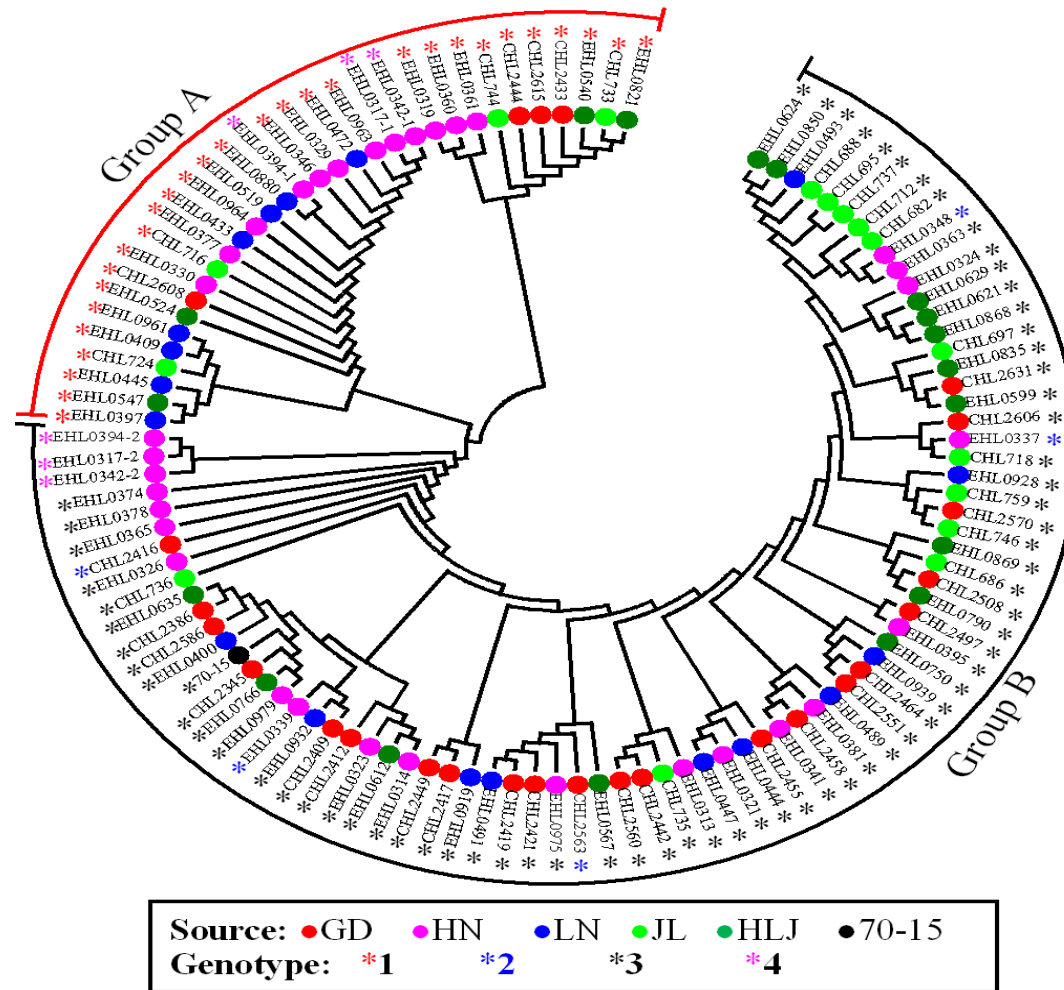


Figure S2 MEGA6-based phylogenetic analysis of 108 *Mo* isolates, based on the sequences of the gene fragment between positions -710 and +530. The two fragments harbored by isolates of genotype 4 are numbered with the suffix -1 and -2.

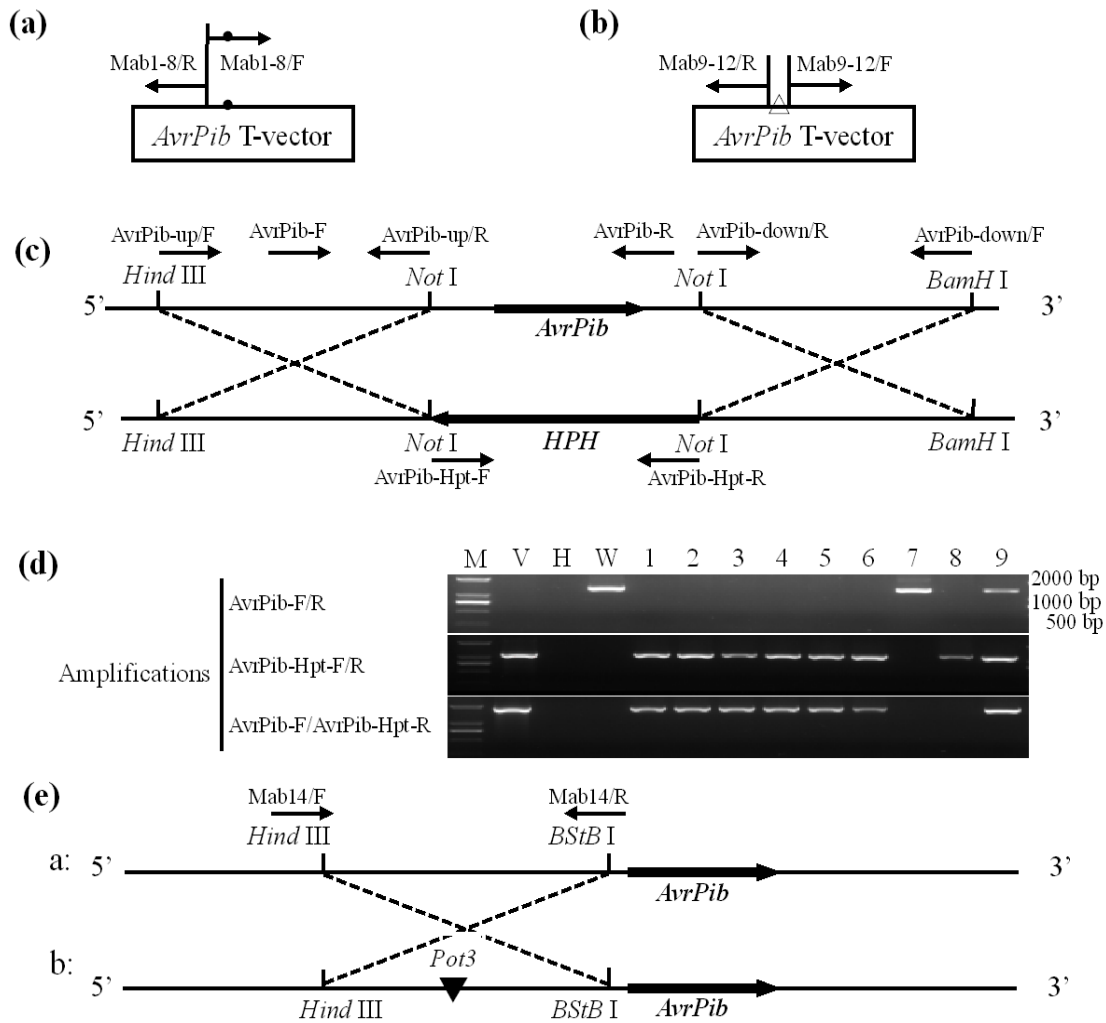


Figure S3 The reconstruction of *AvrPib* alleles. (a) Targeted nucleotide variant(s) incorporated in the forward primer, with the T-plasmid harboring *AvrPib* used as the template for generating alleles Mab1 through Mab8. (b) Site-directed deletion used to generate alleles Mab9 through Mab12; the targeted nucleotides were omitted from each primer, with the T-plasmid harboring *AvrPib* used as the template. (c) *AvrPib*-directed replacement mutation used to generate the Mab13 allele, in which *AvrPib* was replaced by an *Hpt* cassette. (d) Triple PCR-based confirmation of gene replacement mutants. Amplification based on the three primer pairs *AvrPib*-F/R, *AvrPib*-Hpt-F/R, and *AvrPib*-F/*AvrPib*-Hpt-R (as indicated in (c)) showed that #1 through #6 were genuine mutants, while #7 through #9 were incorrect. (e) Domain swapping based on the *Pot3* transposon used to generate the Mab14 allele, in which the *Pot3* sequence in CHL724 was introduced into the 5' sequence of CHL42. Appropriate restriction enzyme recognition sites indicated. M: size marker, V: vector (positive control), H: H₂O (negative control), W: isolate CHL42.

Table S1 PCR primer sequences used in the study

Primer name	Forward primer	Enzyme site	Reverse primer	Enzyme site	Use of primers
MS6-24	GCGAGTTTACAGGTTTAGCA		TTTGGGGCTAATAACAGACC		Gene mapping
MS6-3	CCACATCGCAGCCTCACTTG		CCAGTCGGTTCCAGGTCTTG		
MS6-17	CAAGAATGCAGAGAACCACAG		GTTTTCCGCTGTGTAATAGA		
MS6-7	CCAAGGCACCAGCACAGACC		CAGAAGATGCCTCGGAGATC		
MS6-10	CAACATGTGGTGTCTGATCC		GCAGGGCCCACTACACATGT		
CAG6-23	TGCGTTGTGGCGGTAGTCA		GTTTGTCTGGTCAGCGTCAC		
MS3-5	GAGTTTGAGACCTTGCGATT		GGCGGCAAGTCGCTGAAGG		
MS6-34	CGGATGATGGATGAATTGGC		AGTGCCGATGCTCCAGAAT		
CAG6-21	ACCTCGCATTGTCCGCATTC		TACACCGAGGAACTTGCTTGG		
CAG6-26	GGACAAGGGAGGCAAATCTAAC		ATGCCGACAATGCGAGGTAT		
CAG6-25	ATGCGATTCTGCGTTGCTA		CCGAGATACAAAACGCTACCCCT		
MS3-26	GAAGGCGACAAGTGGCAGT		CTCGTCTGGTATCAGTTGCC		
MS3-6.16	CGAATATGCAAATGTAAGTT		GAGTACTTGCCAGAGAGAA		
MS3-6.15	ATTTCGGTTGATCGTGTGG		GCCACCTGTTTCTCAA		
MS3-6.13	CCCAAGGTAGGTACGAGAAA		TTTCTACTGCCAGACAAG		Gene cloning
b1	TTGGCGCGCCCGTTTGGTTACGTTACCCCTTG	<i>AseI</i>	TAGGCGCGCCTCGACTACATCCCCATGACGC	<i>AseI</i>	
b2	TTGGCGCGCCGCCATCAACGAGACCACAGCCAC	<i>AseI</i>	TTGGCGCGCCACTGCGGGAATGCCGACAATGCGAG	<i>AseI</i>	
b3	ATGGCGCGCCGGAGAATGAGCTGCGAGGTC	<i>AseI</i>	TAGGCGCGCCACTGCGGGAATGCCGACAATGCGAG	<i>AseI</i>	Genotyping
AvrPibF1/R1	GGACAAGGGAGGCAAATCTAAC		ATGCCGACAATGCGAGGTAT		
AvrPibF2/R2	TGGAGAAGACTTTGATGC		GAACGCATAATGGCAACTA		
					Mutations
Mab-1	TTTTGCGATGCAAGCTCTCGGTAT		AAGGCGATAGTGATAAAAAGTGG		
Mab-2	TCTTGCGATGCAAGCTCTCGGTAT		AAGGCGATAGTGATAAAAAGTGG		
Mab-3	TAGTGCATGCAAGCTCTCGGTAT		AAGGCGATAGTGATAAAAAGTGG		
Mab-4	TTTATCACTATCGCCTTACTGC		AGTGGTTGAGGAACGCATAAT		
Mab-5	CTTTTGTGCGATGCAAGCTCT		GCGATAGTGATAAAAAGTGTT		

Mab-6	TTTTATCACTATCGCCTTT T CTGC		GTGGTTGAGGAACGCATAAT		
Mab-7	CTTTCGTGCGATGCAAGCTCT		GCGATAGTGATAAAAAGTGGTT		
Mab-8	CTTTCCTGCGATGCAAGCTCT		GCGATAGTGATAAAAAGTGGTT		
Mab-9	TTTTATCACTATCGCCTTT TG C		GTGGTTGAGGAACGCATAAT		
Mab-10	ATTGCGATGCAAGCTCTCGGTATT		AATGGCAACTAATTTAATTGTATA		
Mab-11	ACACAGGTTACTATCTTGAA		AATAAAGGCGATAGTGATAAAAAGTGG		
Mab-12	ACACAGGTTACTATCTTGAAGAAGGGT		AATGGCAACTAATTTAATTGTATA		
Mab15	TATTTTACTA T TAGTGTGTCGGAC		TTTCCACGGATGTTAAATTCTCT		
Mab16	GAATCCAGAAAATTTAACA T CCGTG		CCCCTTTGGA A CTTCTACC		
					Gene knock out (Mab13)
AvrPib-up	GCAGCGGCCCGCAGACTCAAAGTCCATAGC	<i>NotI</i>	CAT AAGCTT AAACAAGGGATGCTGACTAC	<i>HindIII</i>	
AvrPib-down	GCAG GATCC GTTAGTACCTACAGCTACAAG	<i>BamHI</i>	GCAGCGGCCCGCGCTGGATGGTTATTGCGAT	<i>NotI</i>	
AvrPib-Hpt	GCAGCGGCCCGCTATTGAAGGAGCA TTTTTGG	<i>NotI</i>	GTAGCGGCCCGCGCTCTTGTTCGGT CGGCATC	<i>NotI</i>	
AvrPib	GGACAAGGGAGGCAAATCTAAC		ATACCTCGCATTGTCGGCAT		
					Pot3 domain-swapping
Mab14	TT AAGCTT AGACTGGCGTCGTGACTGGA	<i>Hind III</i>	GAACGCATAATGGCAACTA	<i>BstB I</i>	
					qPCR analysis
Pot2	ACGACCCGTCTTACTTATTTGG		AAGTACGCTTGGTTTTGTTGGAT		
ubiquitin	AACCAGCTGAGGCCCAAGA		ACGATTGATTTAACCAGTCCATGA		
					RT-PCR analysis
Actin	GCGGTTACACCTCTCTACCAC		AGTCTGGATCTCCTGCTCAAAG		
RT-AvrPib	GGGTAGAAGTTCAAAGGGG		TCCACGGTATATTGCTGCCA		

Note: Sequences underlined indicate restrict sites for plasmid constructions, and those boldfaced indicate mutation sites.

Table S2 Details of the 300 *Mo* isolates collected from five provinces of China, and the 12 chosen isolates, which are pathogenic on grass species other than rice

Isolate	Growing area ^a	Sampled cultivar	Sampled county	Sampled time ^b	<i>Pib</i> -infection type	Genotype ^c			Mutation in CDS ^d	<i>AvrPib</i> resequencing ^e
						<i>AvrPib</i> F1/R1	<i>AvrPib</i> F2/R2	Integrated		
Guangdong (GD) population (V/3: 13)									26	
CHL2345	GD I	Mabayinzhan	Qujiang	2008E	A	3	3	3		✓
CHL2357	GD I	Shanyou 428	Wengyuan	2008E	V	1	1	1		
CHL2370	GD II	Jinshanyou 3182	Longchuan	2008E	V	1	0	1		
CHL2375	GD I	Shanyou 253	Renhua	2008E	V	1	1	1		
CHL2384	GD I	Changguidao	Lianping	2008E	V	0	1	1		
CHL2386	GD II	Fengsimiao	Gaoyao	2008E	V	3	3	3	D³⁷⁻³⁸, A137G (E46G)	✓
CHL2387	GD II	Shanyou 428	Meixian	2008E	V	0	1	1		
CHL2394	GD II	Nuo	Meixian	2008E	V	0	0	0		
CHL2401	GD II	Huayougui 99	Wuhua	2008E	V	1	0	1		
CHL2409	GD II	Zhongerruanzhan	Longmen	2008E	V	3	3	3	D³⁷⁻³⁸	✓
CHL2412	GD II	Shanyougui 99	Fengkai	2008E	V	3	3	3	D³⁷⁻³⁸	✓
CHL2416	GD II	Meixiangzhan	Xinxing	2008E	V	2	2	2		✓
CHL2417	GD II	Tianyou 290	Xingning	2008E	MV	0	3	3	T38G (I13S), G166A (V56I)	✓
CHL2419	GD II	Changguidao	Jiexi	2008E	V	3	3	3	D³⁷⁻³⁸	✓
CHL2421	GD III	Sanyinian	Yangjiang	2008E	V	3	3	3	D³⁷⁻³⁸	✓
CHL2426	GD III	Youyou 389	Xinyi	2008E	V	0	1	1		
CHL2433	GD III	Huayou 86	Xinyi	2008E	V	1	1	1		✓
CHL2436	GD III	Huayou 86	Xinyi	2008E	V	0	1	1		
CHL2438	GD III	Changguidao	Gaozhou	2008E	V	0	0	0		
CHL2441	GD III	Zajiaodao	Gaozhou	2008E	V	1	1	1		
CHL2442	GD III	Tianyou 998	Haifeng	2008E	A	3	3	3		✓
CHL2444	GD III	Guangyinzhhan	Foshan	2008E	V	1	0	1		✓
CHL2446	GD III	Shuanghuangzhan	Jiedong	2008E	V	1	1	1		

CHL2448	GD III	Teyou 721	Chaoan	2008E	V	1	1	1		
CHL2449	GD II	Zengyouzhan	Zengcheng	2008E	V	3	3	3	D ³⁷⁻³⁸	✓
CHL2452	GD III	Fengqin	Lianjiang	2008E	V	1	1	1		
CHL2455	GD III	Bairizao	Huidong	2008E	V	3	3	3	D ³⁷⁻³⁸	✓
CHL2457	GD III	Zhanyou 226	Huidong	2008E	V	1	1	1		
CHL2458	GD III	Teyou 721	Yangchun	2008E	V	3	3	3	D ³⁷⁻³⁸	✓
CHL2464	GD III	Taishanbai	Kaiping	2008E	A	3	3	3		✓
CHL2467	GD I	Meixiangzhan	Renhua	2008L	V	2	2	2		
CHL2486	GD I	Fengyou 998	Lechang	2008L	V	1	1	1		
CHL2490	GD I	Guodao No.1	Ruyuan	2008L	V	1	1	1		
CHL2492	GD I	Yueyou 360	Nanxiong	2008L	V	0	0	0		
CHL2497	GD I	Meixiangzhan	Qujiang	2008L	A	3	3	3		✓
CHL2508	GD I	Youyou 308	Wengyuan	2008L	V	3	3	3	D ³⁷⁻³⁸	✓
CHL2509	GD I	Shanyou 89	Pingyuan	2008L	V	1	1	1		
CHL2513	GD I	Shanyou 46	Xinfeng	2008L	V	0	1	1		
CHL2516	GD I	Shanyou 82	Jiaoling	2008L	V	1	1	1		
CHL2518	GD II	Yuxiang 88	Longchuan	2008L	V	0	1	1		
CHL2534	GD II	Shanyou 122	Meixian	2008L	V	1	1	1		
CHL2547	GD II	Tianyou 368	Fengshun	2008L	V	1	1	1		
CHL2549	GD II	Shanyou 122	Dapu	2008L	V	0	1	1		
CHL2551	GD II	Boyoyun 3	Zijin	2008L	V	3	3	3	D ³⁷⁻³⁸	✓
CHL2560	GD III	Huanghuazhan	Boluo	2008L	A	3	3	3		✓
CHL2561	GD II	Longyou 665	Fougang	2008L	V	0	1	1		
CHL2563	GD III	Zhanzinuo	Huidong	2008L	V	2	2	2		✓
CHL2570	GD II	Yesizhan	Longmen	2008L	V	3	3	3	D ³⁷⁻³⁸	✓
CHL2581	GD II	Qiuyou 452	Qingxin	2008L	V	1	0	1		
CHL2584	GD II	Zayounuo	Huaiji	2008L	V	1	1	1		
CHL2586	GD II	Zhengguizhong	Yingde	2008L	A	3	3	3		✓

CHL2593	GD II	Qiuyou 3008	Yunfu	2008L	V	1	0	1		
CHL2600	GD II	Qiuyou 3008	Deqing	2008L	V	1	0	1		
CHL2604	GD III	Guinongzhan	Haifeng	2008L	V	1	1	1		
CHL2606	GD III	Xiaonongzhan	Zhuhai	2008L	A	3	3	3		✓
CHL2608	GD III	Taiwanyouzhan	Yangchun	2008L	V	1	3	1		✓
CHL2615	GD III	Bo II You 15	Lianjiang	2008L	V	1	1	1		✓
CHL2626	GD III	Longyou 673	Xinyi	2008L	V	1	1	1		
CHL2631	GD III	Shanyou 3550	Gaozhou	2008L	V	3	3	3	D ³⁷⁻³⁸ , T201C (S67S)	✓
CHL2636	GD IV	Bo II You 15	Suixi	2008L	V	1	1	1		
Hunan (HN) population (V/3: 8)										30
EHL0312	HN I	Tefu No.7	Taoyuan	2007	V	1	1	1		
EHL0313	HN I	Tefu No.7	Taoyuan	2007	A	3	3	3		✓
EHL0314	HN II	Weiyu 402	Anren	2007	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0317	HN II	Weiyu 402	Anren	2007	V	4	4	4	D ³⁹⁻⁶⁶ , A120G (P40P)	✓
EHL0319	HN II	Liangyou 287	Liling	2007	V	1	3	1		✓
EHL0321	HN II	V402	Hengnan	2007	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0323	HN II	V233	Hengdong	2007	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0324	HN II	I You 402	Hengdong	2007	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0326	HN II	I You 402	Hengnan	2007	V	3	3	3	D ³⁷⁻³⁸ , C207T (S69S)	✓
EHL0327	HN II	Zhuliangyou 30	Dongan	2007	V	1	1	1		
EHL0329	HN II	Douyuanyou 299	Dongan	2007	V	1	1	1	G136A (E46K)	✓
EHL0330	HN II	T You 99	Dongan	2007	V	1	1	1		✓
EHL0331	HN II	Xianfeng 501	Dongan	2007	V	1	1	1		
EHL0337	HN II	Jinyou 71	Dongan	2007	V	2	2	2		✓
EHL0338	HN II	Jinyou 898	Dongan	2007	V	0	0	0		
EHL0339	HN II	Nongping 001	Dongan	2007	V	2	2	2		✓
EHL0340	HN II	Weiyu 507	Dongan	2007	V	0	0	0		

EHL0341	HN II	Weiyou 298	Dongan	2007	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0342	HN II	Weiyou 463	Dongan	2007	V	4	4	4	D ³⁹⁻⁶⁶ , G90C (K30N), A120G (P40P), G123A (K41K)	✓
EHL0345	HN II	T You 213	Dongan	2007	V	1	1	1		
EHL0346	HN II	T You 103	Dongan	2007	V	1	3	1		✓
EHL0348	HN II	Jinyou 103	Dongan	2007	V	2	2	2		✓
EHL0349	HN II	Jinyou 402	Dongan	2007	V	1	1	1		
EHL0350	HN II	Xianfeng No.1	Dongan	2007	V	0	1	1		
EHL0353	HN II	Nongfengyou 909	Dongan	2007	V	1	1	1		
EHL0354	HN II	Jinyou 821	Dongan	2007	V	0	1	1		
EHL0355	HN II	Weiyou 463	Dongan	2007	V	1	1	1		
EHL0356	HN II	Zhongyou No.1	Dongan	2007	V	1	1	1		
EHL0360	HN II	Zhongyou No.1	Dongan	2007	V	1	3	1		✓
EHL0361	HN II	Zhuliangyou 02	Dongan	2007	V	1	3	1		✓
EHL0363	HN II	Xiangnuo	Dongan	2007	A	3	3	3		✓
EHL0364	HN II	T You 706	Dongan	2007	V	0	1	1		
EHL0365	HN II	Zhongyou 493	Dongan	2007	A	3	3	3		✓
EHL0367	HN II	Jinyou 463	Dongan	2007	V	1	1	1		
EHL0368	HN II	Zhuliangyou 83	Dongan	2007	V	0	1	1		
EHL0369	HN III	Jinyou 899	Daoxian	2007	V	1	1	1		
EHL0370	HN III	Jinyou 463	Daoxian	2007	V	0	0	0		
EHL0372	HN III	Nuogu	Daoxian	2007	V	0	0	0		
EHL0373	HN III	Jinyou 463	Daoxian	2007	V	1	1	1		
EHL0374	HN III	Shennongdao 101	Daoxian	2007	A	3	3	3		✓
EHL0377	HN I	Jing No.5	Yiyang	2007	V	1	3	1		✓
EHL0378	HN I	Wanxiang No. 13	Taojiang	2007	A	3	3	3		✓
EHL0379	HN I	Pin No. 3	Taojiang	2007	V	0	1	1		
EHL0380	HN I	Wannuo	Yiyang	2007	V	1	1	1		
EHL0381	HN I	Wannuo	Yiyang	2007	A	3	3	3		✓

EHL0382	HN I	Nuogu	YueYang	2007	V	0	0	0		
EHL0385	HN II	II You 58	Liuyang	2007	V	0	1	1		
EHL0386	HN II	Minghui 63	Liuyang	2007	V	1	1	1		
EHL0387	HN II	II You 838	Liuyang	2007	V	1	1	1		
EHL0393	HN II	Y NO. 232	Youxian	2007	V	1	1	1		
EHL0394	HN II	Xinshanyou 64	Anren	2007	V	4	4	4	D ³⁹⁻⁶⁶ , A120G (P40P)	✓
EHL0395	HN IV	Zhongyou 288	Huaihua	2007	A	3	3	3		✓
EHL0963	HN I	Xianghuayou No. 7	Taojiang	2008	V	1	3	1		✓
EHL0964	HN I	Xianghuayou No. 8	Taojiang	2008	V	1	3	1		✓
EHL0975	HN I	Fuyou II	Taojiang	2008	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0979	HN II	Mixiang No.1	Changsha	2008	V	3	3	3	D ³⁷⁻³⁸	✓
EHL0982	HN II	Xiangwanxian No.17	Changsha	2008	V	0	0	0		
EHL0988	HN II	Chaojidao 527	Zhuzhou	2008	V	1	1	1		
EHL0989	HN II	Xiangwanxian No.13	Zhuzhou	2008	V	1	1	1		
EHL0990	HN II	Xiangzaoxian No.24	Liling	2008	V	0	1	1		
Liaoning (LN) population (V/3: 0)										18
EHL0396	LN I	Minxi 12	Zhuanghe	2006	A	3	3	3		
EHL0397	LN I	Chenhong 59	Zhuanghe	2006	V	1	3	1		✓
EHL0400	LN I	Lige	Zhuanghe	2006	A	3	3	3		✓
EHL0409	LN I	Yanjing 167	Donggang	2006	V	1	1	1		✓
EHL0412	LN I	Huanghai No.6	Donggang	2006	V	1	1	1		
EHL0431	LN I	Liaodan 203	Donggang	2006	V	1	1	1		
EHL0433	LN I	Liaohan 109	Donggang	2006	V	1	1	1		✓
EHL0444	LN II	Chenhong 59	Pulandian	2006	A	3	3	3		✓
EHL0445	LN II	Minxi 12	Pulandian	2006	V	1	1	1		✓
EHL0446	LN II	Gangyu 129	Pulandian	2006	V	0	1	1		
EHL0447	LN II	Koshihikari	Pulandian	2006	A	3	3	3		✓
EHL0468	LN II	Maoyang No.3	Fengchen	2006	V	1	1	1		

EHL0471	LN II	Qiao 201-2	Fengchen	2006	V	1	1	1	
EHL0472	LN II	Panjin 78-2	Fengchen	2006	V	1	3	1	✓
EHL0474	LN II	Chenhe No.1	Fengchen	2006	V	1	1	1	
EHL0484	LN II	Yuanfeng No.9	Fushun	2006	V	1	1	1	
EHL0486	LN II	Fuyou 504	Fushun	2006	V	1	1	1	
EHL0489	LN II	Shennong 0705	Fushun	2006	A	3	3	3	✓
EHL0491	LN II	Jijing 88	Fushun	2006	A	3	3	3	✓
EHL0492	LN II	Xin No.2	Fushun	2006	V	1	1	1	
EHL0493	LN II	Shennong 315	Fushun	2006	A	3	3	3	✓
EHL0496	LN II	Su 01-18	Dashiqiao	2006	V	1	1	1	
EHL0498	LN II	Yanfeng	Dashiqiao	2006	V	1	1	1	
EHL0499	LN II	Yanfeng 47-12	Dashiqiao	2006	V	1	1	1	
EHL0500	LN III	Chenhe No.1	Panjin	2006	V	1	1	1	
EHL0503	LN III	Maoyang No.3	Panjin	2006	V	1	3	1	
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EHL0515	LN III	Liaohu No.1	Panjin	2006	V	1	1	1	
EHL0517	LN III	Huadan 995	Shenyang	2006	V	1	1	1	
EHL0519	LN III	Huadan 995	Tieling	2006	V	1	1	1	✓
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EHL0880	LN I	Gangyu No.2	Dandong	2007	V	1	1	1	✓
EHL0882	LN I	Chenhe No.1	Dandong	2007	V	0	0	0	
EHL0883	LN I	Maoyang No.5	Dandong	2007	V	1	1	1	
EHL0885	LN I	Liaojing No.9	Dandong	2007	V	1	1	1	
EHL0916	LN II	Heixiangdao	Dalian	2007	V	1	1	1	
EHL0917	LN II	Zhuangyan No.8	Dalian	2007	V	1	1	1	
EHL0918	LN II	Koshihikari	Dalian	2007	V	1	1	1	
EHL0919	LN II	Yanfeng 47	Dalian	2007	A	3	3	3	✓

EHL0921	LN II	Gangyuan No.8	Dalian	2007	V	1	1	1	
EHL0922	LN II	Liaonong 06-7	Qinyuan	2007	V	1	1	1	
EHL0924	LN II	Fu 9906	Qinyuan	2007	V	0	0	0	
EHL0925	LN II	Fuxing 90	Qinyuan	2007	V	1	1	1	
EHL0926	LN II	Jijing 88	Qinyuan	2007	V	0	1	1	
EHL0927	LN II	Daohuaxiang	Qinyuan	2007	A	3	3	3	
EHL0928	LN II	Liaonong 06-7	Xinbin	2007	A	3	3	3	✓
EHL0931	LN II	Jiudao 46	Xinbin	2007	A	3	3	3	
EHL0932	LN II	Xinyu No.3	Xinbin	2007	A	3	3	3	✓
EHL0935	LN II	Jijing 88	Xinbin	2007	A	3	3	3	
EHL0936	LN II	Shendao 37	Xifeng	2007	V	1	1	1	
EHL0937	LN II	Shennong 315	Xifeng	2007	V	1	1	1	
EHL0939	LN II	Xinyi No.3	Xifeng	2007	A	3	0	3	✓
EHL0940	LN II	Fuxing 90	Xifeng	2007	V	1	1	1	
EHL0941	LN II	Xinyi No.3	Kaiyuan	2007	V	1	1	1	
EHL0942	LN II	Shennong 9903	Kaiyuan	2007	V	0	1	1	
EHL0943	LN II	Huadan No.995	Kaiyuan	2007	V	1	1	1	
EHL0944	LN II	Fuxing 90	Kaiyuan	2007	V	1	1	1	
EHL0961	LN IV	Chenhe No.1	Suizhong	2007	V	1	1	1	T173C (V58A) ✓
EHL0962	LN IV	Yanjing 218	Suizhong	2007	V	1	1	1	
Jilin (JL) population (V/3: 0)									16
CHL678	JL I	Tong 31	Yongji	2003	A	3	3	3	
CHL680	JL I	Ji 04	Yongji	2003	A	3	3	3	
CHL682	JL I	Tong 313	Yongji	2003	A	3	3	3	✓
CHL684	JL I	Fengyou 201	Yongji	2003	A	3	3	3	
CHL686	JL I	Pingjing 1	Yongji	2003	A	3	3	3	✓
CHL688	JL I	Jiu 01 C 6	Yongji	2003	A	3	3	3	✓
CHL690	JL I	Changbai 9	Shulan	2003	A	3	3	3	

CHL692	JL I	Dongnong V 7	Shulan	2003	A	3	3	3	
CHL693	JL I	Yan 312	Shulan	2003	A	3	3	3	
CHL695	JL I	Songjing 6	Shulan	2003	A	3	3	3	✓
CHL697	JL I	301	Shulan	2003	A	3	3	3	✓
CHL699	JL I	Tongyu 12	Shulan	2003	A	3	3	3	
CHL700	JL I	Wuyou 1	Shulan	2003	A	3	3	3	
CHL701	JL I	99-35	Panshi	2003	A	3	3	3	
CHL702	JL I	Tongfeng No. 3	Panshi	2003	A	3	3	3	
CHL703	JL I	Ji 01-3628	Panshi	2003	A	3	3	3	
CHL704	JL I	Pingjing No. 2	Panshi	2003	A	3	3	3	
CHL705	JL I	Chang 6	Panshi	2003	A	3	3	3	
CHL708	JL IV	Tongjing 612	Jiaohe	2003	A	3	3	3	
CHL710	JL IV	Yan 313	Jiaohe	2003	A	3	3	3	
CHL712	JL IV	Changbai 9	Jiaohe	2003	A	3	3	3	✓
CHL714	JL IV	Wuyou C	Jiaohe	2003	A	3	3	3	
CHL715	JL IV	Yannian No. 1	Jiaohe	2003	V	0	1	1	
CHL716	JL IV	Jiudao 16	Jiaohe	2003	V	1	1	1	✓
CHL718	JL IV	Changlixiang 12	Jiaohe	2003	A	3	3	3	✓
CHL721	JL I	Jiu 01 D 13	Jilin	2003	A	3	3	3	
CHL722	JL I	Ji T620-4	Jilin	2003	A	3	3	3	
CHL724	JL I	T 02	Jilin	2003	V	1	1	1	✓
CHL725	JL I	Tongjing 790 B	Jilin	2003	V	1	1	1	
CHL730	JL I	Tongnian 3	Jilin	2003	A	3	3	3	
CHL731	JL I	Tongyu 308	Jilin	2003	A	3	3	3	
CHL733	JL I	Tongnian 23	Meihekou	2003	V	1	1	1	✓
CHL734	JL I	Tong 3158	Liuhe	2003	A	3	3	3	
CHL735	JL I	Daliwang	Liuhe	2003	A	3	3	3	✓
CHL736	JL I	Unknown	Lishu	2003	A	3	3	3	✓

CHL737	JL I	Unknown	Yitong	2003	A	3	3	3	✓
CHL739	JL I	182	Jiutai	2003	V	0	1	1	
CHL740	JL I	183	Jiutai	2003	V	0	1	1	
CHL741	JL I	No. 55	Jiutai	2003	V	1	1	1	
CHL742	JL I	No. 55	Jiutai	2003	V	1	1	1	
CHL743	JL I	No. 52	Jiutai	2003	V	1	1	1	
CHL744	JL I	Tong 793	Dehui	2003	V	1	1	1	✓
CHL745	JL I	Tong 190	Dehui	2003	V	1	1	1	
CHL746	JL I	Menggudao	Dongfeng	2003	A	3	3	3	✓
CHL748	JL I	Changxiangsi	Dongfeng	2003	A	3	3	3	
CHL749	JL I	Tongjing 769	Dongfeng	2003	V	1	1	1	
CHL751	JL I	Tongyin 58	Dongfeng	2003	A	3	3	3	
CHL752	JL I	Zupei 11	Dongfeng	2003	A	3	3	3	
CHL754	JL I	Chaochan 2	Gongzhuling	2003	V	1	1	1	
CHL755	JL I	Unknown	Yitong	2003	A	3	3	3	
CHL756	JL I	Xueguang	Yongji	2002	A	3	3	3	
CHL757	JL IV	Unknown	Jiaohe	2002	A	3	3	3	
CHL759	JL III	Shangyu No. 397	Helong	2002	A	3	3	3	✓
CHL760	JL I	Menggudao	Meihekou	2002	A	3	3	3	
CHL761	JL I	403	Liuhe	2002	A	3	3	3	
CHL762	JL I	112	Liuhe	2002	A	3	3	3	
CHL764	JL I	Tong 458	Dongfeng	2002	A	3	3	3	
CHL765	JL I	Unknown	Gongzhuling	2002	A	3	3	3	
CHL766	JL I	Unknown	Gongzhuling	2002	A	3	3	3	
CHL767	JL I	939	Baichen	2002	A	3	3	3	
Heilongjiang (HLJ) population (V/3: 0)									18
EHL0524	HLJ III	Songjing 7	Zhaoyuan	2006	V	1	1	1	✓
EHL0527	HLJ II	Kendao 10	Anqin	2006	V	1	1	1	

EHL0532	HLJ II	Song 98-131	Anqin	2006	V	1	1	1	
EHL0540	HLJ I	Songjing 10	Achen	2006	V	1	1	1	✓
EHL0547	HLJ II	Kendao 12	Tonghe	2006	V	1	1	1	✓
EHL0555	HLJ II	Kuyuku 131	Tonghe	2006	A	3	3	3	
EHL0557	HLJ II	Suijing No.4	Tonghe	2006	A	3	3	3	
EHL0559	HLJ II	Dongnong 220	Shangzhi	2006	A	3	3	3	
EHL0560	HLJ II	Puyou 18	Shangzhi	2006	V	1	1	1	
EHL0567	HLJ II	Wuyoudao No.3	Shangzhi	2006	A	3	3	3	✓
EHL0568	HLJ II	Wuyoudao No.3	Shangzhi	2006	A	3	3	3	
EHL0570	HLJ II	Mudanjiang 19	Shangzhi	2006	A	3	3	3	
EHL0571	HLJ II	Kendao 10	Shangzhi	2006	A	3	3	3	
EHL0592	HLJ II	Shangyu 397	Muling	2006	A	3	3	3	
EHL0598	HLJ III	Punian No.7	Hulin	2006	A	3	3	3	
EHL0599	HLJ III	Kenjiandao No.6	Hulin	2006	A	3	3	3	✓
EHL0603	HLJ III	Kuyuku 131	Hulin	2006	V	1	1	1	
EHL0611	HLJ III	Kendao 12	Hulin	2006	A	3	3	3	
EHL0612	HLJ II	Kuyuku 131	Mishan	2006	A	3	3	3	✓
EHL0615	HLJ II	Suijing No.4	Mishan	2006	A	3	3	3	
EHL0618	HLJ II	Kuyuku 131	Mishan	2006	A	3	3	3	
EHL0621	HLJ II	Longdun 02-318	Jidong	2006	A	3	3	3	T160C (F54L) ✓
EHL0624	HLJ II	Kuyuku 131	Tangyuan	2006	A	3	3	3	✓
EHL0625	HLJ II	Kuyuku 131	Huachuan	2006	V	1	1	1	
EHL0629	HLJ II	Longdun 102	Jiamusi	2006	A	3	3	3	✓
EHL0632	HLJ II	Kuyuku 131	Jiamusi	2006	A	3	3	3	
EHL0635	HLJ II	Kuyuku 131	Baoqin	2006	A	3	3	3	✓
EHL0636	HLJ II	Kuyuku 131	Jixian	2006	A	3	3	3	
EHL0750	HLJ I	Kuyuku 131	Mudanjiang	2006	A	3	3	3	✓
EHL0755	HLJ II	Kuyuku 131	Tangyuan	2006	A	3	3	3	

EHL0757	HLJ II	Kendao No.6	Tangyuan	2006	A	3	3	3	
EHL0764	HLJ II	Kendao No.11	Qinan	2006	A	3	3	3	
EHL0766	HLJ II	Kuyuku 131	Qinan	2006	A	3	3	3	✓
EHL0770	HLJ II	Longjing 17	Qinan	2006	A	3	3	3	
EHL0776	HLJ I	Kendao No.6	Mudanjiang	2006	A	3	3	3	
EHL0779	HLJ I	Kuyuku 131	Mudanjiang	2006	A	3	3	3	
EHL0781	HLJ I	Longjing 17	Mudanjiang	2006	A	3	3	3	
EHL0787	HLJ III	Kenjiandao 13	Jiansanjiang	2006	A	3	3	3	
EHL0790	HLJ III	Kuyuku 131	Jiansanjiang	2006	A	3	3	3	✓
EHL0794	HLJ I	Jite 639	Wuchang	2007	A	3	3	3	
EHL0798	HLJ III	Songjing 3	Zhaodong	2007	V	0	1	1	
EHL0801	HLJ III	Songjing 12	Zhaodong	2007	V	1	1	1	
EHL0814	HLJ III	Jijing 106	Zhaodong	2007	V	1	1	1	
EHL0821	HLJ I	Songjing 5	Shuangchen	2007	V	1	1	1	T116C (V39A) ✓
EHL0828	HLJ I	Songjing 6	Shuangchen	2007	V	1	1	1	
EHL0830	HLJ II	Kendao 12	Fangzheng	2007	V	1	1	1	
EHL0834	HLJ I	Menggudao	Mudanjiang	2007	A	3	3	3	
EHL0835	HLJ I	Menggudao	Mudanjiang	2007	A	3	3	3	✓
EHL0836	HLJ I	Shangyu 397	Mudanjiang	2007	A	3	3	3	
EHL0837	HLJ I	Shangyu 397	Mudanjiang	2007	A	3	3	3	
EHL0849	HLJ II	Kuyuku 131	Muling	2007	A	3	3	3	
EHL0850	HLJ II	Kuyuku 131	Muling	2007	A	3	3	3	✓
EHL0856	HLJ II	Puyou 9	Muling	2007	A	3	3	3	
EHL0858	HLJ II	Puyou 9	Muling	2007	A	3	3	3	
EHL0865	HLJ III	Longjing 17	Hulin	2007	A	3	3	3	
EHL0866	HLJ III	Longjing 17	Hulin	2007	A	3	3	3	
EHL0868	HLJ III	Kenjiandao 10	Hulin	2007	A	3	3	3	✓
EHL0869	HLJ III	Kenjiandao 10	Hulin	2007	A	3	3	3	✓

EHL0870	HLJ III	Longjing 17	Hulin	2007	A	3	3	3
EHL0871	HLJ III	Longjing 17	Hulin	2007	A	3	3	3
Barley and weed derived isolates								
CHL1	N/A	Barley	Smoeng, Thailand	1998		3	3	3
CHL2	N/A	Barley	Smoeng, Thailand	1998		3	3	3
CHL27	N/A	Weed	Smoeng, Thailand	1998		3	3	3
CHL30	N/A	Weed	Smoeng, Thailand	1998		3	3	3
CHL31	N/A	Weed	Smoeng, Thailand	1998		3	3	3
CHL32	N/A	Weed	Smoeng, Thailand	1998		3	3	3
CHL325	N/A	Weed	Guangzhou, China	2001		3	3	3
CHL326	N/A	Weed	Guangzhou, China	2001		3	3	3
CHL329	N/A	Weed	Guangzhou, China	2001		3	3	3
CHL330	N/A	Weed	Guangzhou, China	2001		3	3	3
CHL331	N/A	Weed	Guangzhou, China	2001		0	3	3
CHL332	N/A	Weed	Guangzhou, China	2001		0	3	3

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^a The rice-growing areas in the respective provinces, China, were adopted from Regionalization of Rice Cropping in China Edited in 1988 by China National Rice Research Institute, Hangzhou, China. Abbreviations GD I and GD II mean #1 and #2 rice-growing areas, respectively, in Guangdong province and so on.

^b 2008E and 2008L mean Early season (from March to July) and Late season (from July to November) in 2008, respectively and so on.

^c PCR product-based genotypes 0, 1, 2, 3, and 4, respectively, indicate none, highest, second higher, normal, and double binds of *AvrPib* products (also see Fig. 2).

^d D³⁷⁻³⁸, deletion at A37T38; A137G, SNP at #137 position and so on.

^e Isolates being phenotypes/genotypes of both the major ones (V/1 and A/3) were subjected to selective resequencing, those being other three ones (V/2, V/3, and V/4) were all subjected to resequencing. A, avirulent; V, virulent, MV, moderately virulent.