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Germplasm Evaluation and Molecular Selection of Potato (*Solanum tuberosum* L.) Cultivars with Disease Resistance in China

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Table S1. The names and codes of accessions used in this study

Code	Accession	Source	Code	Accession	Source
1	Zhongshu 5	Beijing	2	Tianshu 11	Gansu
3	Longshu 6	Gansu	4	Tianshu 10	Gansu
5	Longshu 3	Gansu	6	Dingshu 1	Gansu
7	Xindaping	Gansu	8	Longshu 5	Gansu
9	Zhuangshu 3	Gansu	10	Jizhangshu 8	Hebei
11	Jizhangshu 12	Hebei	12	Kexin 2	Heilongjiang
13	Netherlands 15	Heilongjiang	14	Kexin 13	Heilongjiang
15	Kexin 18	Heilongjiang	16	Kexin 1	Heilongjiang
17	Luyin 1	Heilongjiang	18	Zhongshu 7	Heilongjiang
19	Dongnong 303	Heilongjiang	20	Zhongshu 20	Heilongjiang
21	Kexin 21	Heilongjiang	22	Kexin 6	Heilongjiang
23	Yushu 2	Henan	24	Zhengshu 5	Henan
25	Zhengshu 6	Henan	26	Luo potato 8	Henan
27	Nuanzhoujin 8	Henan	28	Eshu 5	Hubei
29	Xinyu 4	Hubei	30	Russian 7	Jilin
31	Chunshu 5	Jilin	32	Shepody	Jilin
33	Yanshu 4	Jilin	34	Zaodabai	Liaoning
35	Ningshu 4	Ningxia	36	Unica	Qinghai
37	Qingshu168	Qinghai	38	Zihuabai	Shaanxi
39	Jingbian 1	Shaanxi	40	Favorita	Shandong
41	Jinshu 16	Shanxi	42	Yushu 1	Chongqing
43	Mira	Chongqing	44	Anshu 1	Guizhou
45	Liangshu 14	Sichuan	46	Changguohong	Xizang
47	Emma	Xizang	48	Shizong 1	Yunnan
49	White potato	Yunnan	50	Shizong potato	Yunnan
51	3810	Yunnan	52	Hui-2	Yunnan
53	Cooperation 88	Yunnan	54	Lishu 7	Yunnan
55	Dinong 1	Yunnan	56	Xiaowuyu	Yunnan
57	Xuanshu 4	Yunnan	58	Mian potato	Yunnan
59	Tiechanghong potato	Yunnan	60	γ-2	Yunnan
61	Weiyu 3	Yunnan	62	Shixuan 11	Yunnan
63	Wuhua potato	Yunnan	64	Big eye potato	Yunnan
65	Lishu 1	Yunnan	66	Kangqing 9-1	Yunnan
67	Ed 53	Yunnan	68	Yunshu103	Yunnan
69	Yunshu 301	Yunnan	70	Yunshu 201	Yunnan
71	TP262	Yunnan	72	Lishu 6	Yunnan
73	Aihuashuimo	Yunnan	74	JS03-136	Yunnan
75	Ludianshuimo	Yunnan	76	Zhongdianhong	Yunnan

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Table S2. PCR primers and optimized detection conditions used in marker-assisted selection

Target gene	Primer	Primer sequence(5'-3')	Product size(bp)	Annealing temp. (°C)	Concentration (μM)	References
Rx1	RxSP-S3	ATCTTGGTTTGAATACATGG	1230	58	0.5	Mori *et al.* (2011)
	RxSP-A2	CACAATATTGGAAGGATTCA			0.5	
Ry_{chc}	RY186-11	TGGTAGGGATATTTTCCTTAGA	587	55	0.4	Mori *et al.* (2011)
	RY186-12	GCAAATCCTAGGTTATCAACTCA			0.4	
Ry_{adg}	RYSC3-1	ATACACTCATCTAAATTTGATGG	321	60	0.5	Kasai *et al.* (2000)
	RYSC3-2	AGGATATACGGCATCATTTTTCCGA			0.5	
R1	76-2sf2	CACTCGTGACATATCCTCACTA	1400	65	0.5	Ballvora *et al.* (2002)
	76-2SR	CAACCCTGGCATGCCACG			0.5	
R2	R2SP-S7	TACTAACCTTTTCCTAGATG	800	55	0.5	Mori *et al.* (2011)
	R2SP-A9	AGAACTTTCTCACAGCTTTT			0.5	
R3a	SHa-F	ATCGTTGTCATGCTATGAGATTGTT	982	56	0.5	Huang *et al.* (2005)
	SHa-R	CTTCAAGGTAGTGGGCAGTATGCTT			0.5	
R3b	R3bF4	GTCGATGAATGCTATGTTTCTCGAGA	378	55	0.5	Li *et al.* (2011)
	R3bR5	ACCAGTTTCTTGCAATTCCAGATTG			0.5	

Table S3. SSR primers and optimized detection conditions used in genetic analysis

Primer name	SSR motif	Primer sequence(5'-3')	Chromosome location	Annealing temp. (°C)	References
STM2022	$(CAA)_3...(CAA)_3$	F:GCGTCAGCGATTTCAGTACTA R:TTCAGTCAACTCCTGTTGCG	II	53	Ghislain *et al.* (2004)
STM3023a	$(GA)_9(GA)_8(GA)_4$	F: AAGCTGTTACTTGATTGCTGCA R:GTTCTGGCATTTCCATCTAGAGA	IV	50	Ghislain *et al.* (2004)
STPoAc58	$(TA)_{13}$	F:TTGATGAAAGGAATGCAGCTTGTG R:ACGTTAAAGAAGTGAGAGTACGAC	V	57	Ghislain *et al.* (2004)
STM0019a	(AT)7(GT)10(AT)4 (GT)5(GC)4(GT)4	F: AATAGGTGTACTGACTCTCAATG R:TTGAAGTAAAAGTCCTAGTATGTG	VI	47	Ghislain *et al.* (2004)
STM2013	(TCTA)6	F: TTCGGAATTACCCTCTGCC R: AAAAAAAGAACGCGCACG	VII	55	Ghislain *et al.* (2004)
STIM1104	(TCT)5	F:TGATTCTCTTGCCTACTGTAATCG R: CAAAGTGGTGTGAAGCTGTGA	VIII	57	Ghislain *et al.* (2004)
STM0037	$(TC)_5(AC)_6AA$ $(AC)_7(AT)_4$	F:AATTTAACTTAGAAGATTAGTCTC R: ATTTGGTTGGGTATGATA	XI	53	Ghislain *et al.* (2004)
STM0030	Compound $(GT/GC)(GT)_8$	F: AGAGATCGATGTAAAACACGT R: GTGGCATTTTGATGGATT	XII	53	Ghislain *et al.* (2004)
StI023	(GGC)n(GGT)n	F:GCGAATGACAGGACAAGAGG R:TGCCACTGCTACCATAACCA	X	55	Feingold *et al.* (2005)
StI029	$(CA)_{imp}(TC)_{imp}$	F:GACTGGCTGACCCTGAACTC R:GACAAAATTACAGGAACTGCAAA	II	55	Feingold *et al.* (2005)
StI057	(AAG)n	F:CCTTGTAGAACAGCAGTGGTC R:TCCGCCAAGACTGATGCA	IX	55	Feingold *et al.* (2005)
STM5136	$(AGA)_5$	F:GGGAAAAGGAAAAGCTCAA R:GTTTATATGAACCACCTCAGGCAC	I	50	Reid and Kerr (2007)