

Supplementary Materials

Table S1. Details of CAPS markers used in this study. In the table, the physical position of the expected sequence fragment is given. The primers and the polymorphic SNP on which the marker was designed are also given in the table.

CAPS marker	Location	Primer sequence (5'-3')	SNP
Q7M1	SL3.0ch07:1055917..1060714	CTATGGGAGACTCAACGTAT ATCCTCTCCAAGTTAAACG	GGAACAGGAG [T/C] TCCACCTCC
Q7M2	SL3.0ch07:1506409..1518012	ACCAGTTCTACTTGAAAAGAA ACGATTAAGGTAGAGGCCAAGG	TCTACGAAAT [T/A] TTATGTGCT
Q7M3	SL3.0ch07:1574953..1577763	CACAAGACATTGAGTGTTTCATTGAT TGCAACATGTCCTTAAGTGGA	GTTATTGGTA [T/C] TAGCAGGAC
Q7M4	SL3.0ch07: 1624160..1636142	TTGTATTGTTTTCTAGGATTGA GCATGAAGAAAGTAAGGGGACT	GAAGTGTAGC [T/A] TTCCCCGGT
Q7M5	SL3.0ch07:1754891..1758020	TGGCTTTACAACCAAAGATCA TCCAAATATAACCCTGCCAAA	CGCGTAAGTA [T/C] TTTTCATCGT
Q7M7	SL3.0ch07:1266878..1270553	AACGTGAGATCACACGAAC CGCGAAAAACAACAATTTA	GTTACCATAGT [G/A] CATATCTT
Q7M9	SL3.0ch07:1783293..1787487	ATAGGTGGTTGGTAGTACGTA TTATTTTCCTTGTTCGATTAAGC	GAAACTTTTT [T/A] AAGATAAAT

Table S2. Locations on the *S. lycopersicum* ITAG4.0 reference genome with resistant specific coverage.

Chromosome	Start	End	Gene	Gene function
SL4.0ch02	43262484	43262515		
SL4.0ch02	43262515	43262546		
SL4.0ch02	43262546	43262577		
SL4.0ch02	43899410	43899441		
SL4.0ch02	45861090	45861121	Solyc02g084740.4	Cytochrome P450
SL4.0ch02	45861121	45861152	Solyc02g084740.4	Cytochrome P450
SL4.0ch02	46120963	46120994		
SL4.0ch02	48143496	48143527		
SL4.0ch03	46778783	46778814		
SL4.0ch04	63165755	63165786	Solyc04g081190.3	Vsf-1 transcription factor
SL4.0ch04	63767899	63767930		
SL4.0ch05	2574426	2574457		
SL4.0ch07	61619289	61619320		
SL4.0ch10	20068811	20068842		
SL4.0ch11	10668123	10668154		
SL4.0ch12	44524339	44524370		

Table S3. Locations on the *S. lycopersicum* ITAG4.0 reference genome with susceptible specific coverage.

Chromosome	Start	End	Gene	Gene function
SL4.0ch01	1850483	1850514		
SL4.0ch01	51678519	51678550		
SL4.0ch01	69201641	69201672		
SL4.0ch02	29817877	29817908		
SL4.0ch02	29817939	29817970		
SL4.0ch02	33193901	33193932		
SL4.0ch02	42609345	42609376		
SL4.0ch02	42727858	42727889		

SL4.0ch02	42789083	42789114	Solyc02g080620.3	Prephenate dehydratase family protein
SL4.0ch02	42852137	42852168		
SL4.0ch02	42930195	42930226	Solyc02g080820.3	Peroxisomal membrane protein PMP22
SL4.0ch02	42936178	42936209		
SL4.0ch02	42936209	42936240		
SL4.0ch02	42936240	42936271		
SL4.0ch02	43090062	43090093		
SL4.0ch02	43090093	43090124		
SL4.0ch02	43600787	43600818		
SL4.0ch02	44461967	44461998	Solyc02g082810.3	CCA-adding enzyme
SL4.0ch02	44461998	44462029	Solyc02g082810.3	CCA-adding enzyme
SL4.0ch02	44491634	44491665	Solyc02g082840.3	Protein GRIP
SL4.0ch02	45195985	45196016		
SL4.0ch02	45527778	45527809		
SL4.0ch02	45695488	45695519		
SL4.0ch02	45939117	45939148		
SL4.0ch02	46164487	46164518		
SL4.0ch02	46277296	46277327		
SL4.0ch02	46325687	46325718	Solyc02g085390.4	Uncharacterized ATP-dependent helicase C25A8.01c
SL4.0ch02	46378883	46378914		
SL4.0ch02	46424050	46424081		
SL4.0ch02	46478455	46478486		
SL4.0ch02	46542377	46542408		
SL4.0ch02	46579360	46579391	Solyc02g085790.3	T-complex protein 1 subunit zeta
SL4.0ch02	46579391	46579422	Solyc02g085790.3	T-complex protein 1 subunit zeta
SL4.0ch02	46672298	46672329		
SL4.0ch02	46672329	46672360		
SL4.0ch02	46672360	46672391		
SL4.0ch02	46888988	46889019		
SL4.0ch02	46889019	46889050		
SL4.0ch02	46999596	46999627	Solyc02g086270.4	Receptor-like kinase
SL4.0ch02	47230236	47230267	Solyc02g086550.3	Os06g0661900 protein
SL4.0ch02	47230267	47230298	Solyc02g086550.3	Os06g0661900 protein
SL4.0ch02	47405696	47405727		
SL4.0ch02	48085154	48085185		
SL4.0ch02	48085216	48085247		
SL4.0ch02	48143496	48143527		
SL4.0ch02	48193778	48193809		
SL4.0ch02	48380336	48380367		
SL4.0ch02	48655120	48655151		
SL4.0ch02	48829898	48829929		
SL4.0ch02	49070210	49070241	Solyc02g089150.4	MAPprotein kinase-like protein
SL4.0ch02	49282281	49282312		
SL4.0ch02	49286497	49286528		
SL4.0ch02	49770159	49770190		
SL4.0ch02	49770190	49770221		
SL4.0ch03	16906501	16906532		
SL4.0ch03	50748116	50748147		
SL4.0ch04	4253913	4253944		
SL4.0ch04	27998921	27998952		
SL4.0ch04	31211575	31211606		
SL4.0ch04	51481266	51481297		
SL4.0ch04	53085919	53085950		
SL4.0ch04	61408241	61408272		
SL4.0ch04	61614174	61614205	Solyc04g079040.4	Serine carboxypeptidase 1

SL4.0ch04	61614205	61614236	Solyc04g079040.4	Serine carboxypeptidase 1
SL4.0ch04	61614236	61614267	Solyc04g079040.4	Serine carboxypeptidase 1
SL4.0ch04	61624590	61624621	Solyc04g079060.3	
SL4.0ch04	61638416	61638447		
SL4.0ch04	61638447	61638478		
SL4.0ch04	61647313	61647344		
SL4.0ch04	61718582	61718613	Solyc04g079170.4	Unknown Protein
SL4.0ch04	61718613	61718644	Solyc04g079170.4	Unknown Protein
SL4.0ch04	61746451	61746482		
SL4.0ch04	61829748	61829779		
SL4.0ch04	62233833	62233864		
SL4.0ch04	62257207	62257238		
SL4.0ch04	62257238	62257269		
SL4.0ch04	62257269	62257300		
SL4.0ch04	62257858	62257889		
SL4.0ch04	62365583	62365614		
SL4.0ch04	62513856	62513887		
SL4.0ch04	62513887	62513918		
SL4.0ch04	62631005	62631036		
SL4.0ch04	62651465	62651496		
SL4.0ch04	62774163	62774194	Solyc04g080710.4	BHLH transcription factor-like protein
SL4.0ch04	62819516	62819547		
SL4.0ch04	62819547	62819578		
SL4.0ch04	62819578	62819609		
SL4.0ch04	62826677	62826708		
SL4.0ch04	62826708	62826739		
SL4.0ch04	62835791	62835822	Solyc04g080770.3	GTP-binding protein hflX
SL4.0ch04	62941253	62941284	Solyc04g080915.1	
SL4.0ch04	62944632	62944663		
SL4.0ch04	62944663	62944694		
SL4.0ch04	62944694	62944725		
SL4.0ch04	62944787	62944818		
SL4.0ch04	62955358	62955389		
SL4.0ch04	63026286	63026317	Solyc04g080990.2	C4-dicarboxylate transporter/malic acid transport family
SL4.0ch04	63026317	63026348	Solyc04g080990.2	C4-dicarboxylate transporter/malic acid transport family
SL4.0ch04	63141730	63141761		
SL4.0ch04	63141761	63141792		
SL4.0ch04	63216595	63216626		
SL4.0ch04	63230669	63230700		
SL4.0ch04	63230948	63230979		
SL4.0ch04	63267032	63267063		
SL4.0ch04	63267063	63267094		
SL4.0ch04	63267094	63267125		
SL4.0ch04	63269605	63269636		
SL4.0ch04	63303519	63303550	Solyc04g081290.3	Lysine decarboxylase-like protein
SL4.0ch04	63314214	63314245		
SL4.0ch04	63363845	63363876		
SL4.0ch04	63363876	63363907		
SL4.0ch04	63363907	63363938		
SL4.0ch04	63394411	63394442	Solyc04g081450.3	Unknown Protein
SL4.0ch04	63432479	63432510		
SL4.0ch04	63432510	63432541		
SL4.0ch04	63451265	63451296		
SL4.0ch04	63451296	63451327		

SL4.0ch04	63625113	63625144		
SL4.0ch04	63655276	63655307		
SL4.0ch04	63655307	63655338		
SL4.0ch04	63655338	63655369		
SL4.0ch04	63733799	63733830		
SL4.0ch04	63746075	63746106	Solyc04g081910.4	Calcium-dependent protein kinase
SL4.0ch04	63803518	63803549		
SL4.0ch04	63803580	63803611		
SL4.0ch04	63812632	63812663		
SL4.0ch04	63872307	63872338		
SL4.0ch04	63872338	63872369		
SL4.0ch04	63932199	63932230		
SL4.0ch04	63932230	63932261		
SL4.0ch04	63955759	63955790	Solyc04g082260.4	Receptor protein kinase-like protein
SL4.0ch04	63955790	63955821	Solyc04g082260.4	Receptor protein kinase-like protein
SL4.0ch04	64087075	64087106		
SL4.0ch04	64128150	64128181		
SL4.0ch04	64154779	64154810	Solyc04g082540.2	Dolichyl-diphosphooligosaccharide-protein glycosyltransferase subunit 1
SL4.0ch04	64154810	64154841	Solyc04g082540.2	Dolichyl-diphosphooligosaccharide-protein glycosyltransferase subunit 1
SL4.0ch04	64227009	64227040		
SL4.0ch04	64227040	64227071		
SL4.0ch04	64227071	64227102		
SL4.0ch04	64241052	64241083	Solyc04g082670.4	SWI/SNF complex subunit SMARCC1
SL4.0ch04	64253607	64253638		
SL4.0ch04	64289629	64289660	Solyc04g082760.3	SWI/SNF complex subunit SMARCC1
SL4.0ch04	64289660	64289691	Solyc04g082760.3	SWI/SNF complex subunit SMARCC1
SL4.0ch04	64298867	64298898	Solyc04g082780.3	Cinnamoyl CoA reductase-like 1
SL4.0ch04	64317405	64317436	Solyc04g082810.4	AT-hook DNA-binding protein
SL4.0ch05	8538268	8538299		
SL4.0ch05	23630401	23630432		
SL4.0ch05	28133275	28133306		
SL4.0ch05	56643851	56643882		
SL4.0ch06	2570458	2570489		
SL4.0ch06	25828611	25828642		
SL4.0ch07	29571675	29571706		
SL4.0ch07	29571706	29571737		
SL4.0ch07	32874601	32874632	Solyc07g026930.3	Tetracycline transporter
SL4.0ch07	33550773	33550804		
SL4.0ch07	33550804	33550835		
SL4.0ch07	33550835	33550866		
SL4.0ch07	33550866	33550897		
SL4.0ch07	33550897	33550928		
SL4.0ch07	33550928	33550959		
SL4.0ch07	33553656	33553687		
SL4.0ch08	1507902	1507933	Solyc08g006930.3	Photosystem I reaction center subunit X psaK
SL4.0ch09	9828240	9828271		
SL4.0ch09	19395026	19395057		
SL4.0ch09	61438280	61438311		
SL4.0ch09	62162223	62162254		
SL4.0ch09	66761042	66761073		
SL4.0ch11	47942554	47942585		
SL4.0ch11	52125818	52125849		

Table S4. Genes mapped on QTL on chromosome 7.

SGN ITAG 3.2	Physical position	Gene function
<i>Solyc07g006550</i>	1370920..1371769	Ribonuclease S-6
<i>Solyc07g006560</i>	1375314..1372873	Hypersensitive response assisting protein
<i>Solyc07g006570</i>	1383245..1385020	Ribonuclease
<i>Solyc07g006580</i>	1387336..1406636	Diacylglycerol kinase
<i>Solyc07g006590</i>	1425532..1425798	Kinase superfamily with octicosapeptide/Phox/Bem1p domain-containing protein
<i>Solyc07g006600</i>	1448390..1448947	Glutamine dumper 3
<i>Solyc07g006610</i>	1469104..1474046	Tyrosine kinase family protein
<i>Solyc07g006620</i>	1480278..1487817	Receptor-like kinase
<i>Solyc07g006630</i>	1496758..1494884	CONSTANS-like protein
<i>Solyc07g006640</i>	1506409..1518012	ADP-ribosylation factor family protein
<i>Solyc07g006650.2</i>	1523093..1516230	Xylose isomerase
<i>Solyc07g006660</i>	1526859..1525198	Glyoxal oxidase-related protein
<i>Solyc07g006670</i>	1528452..1529837	HXXXD-type acyl-transferase family protein
<i>Solyc07g006680</i>	1533723..1535081	HXXXD-type acyl-transferase family protein
<i>Solyc07g006690</i>	1558351..1547717	alpha/beta-Hydrolases superfamily protein

Computer Code S1. Computer code developed for the Bulk Segregant Analysis (BSA).

Modified_CoSSA_v1_WUR. For the analysis a bash script with tools BWA, SAMtools, Mosdepth and KMC were used to process and analyze the data. Boundary computation and visualization of the results were done using a Jupyter Notebook.