

Supplementary Table 1. Recombination crossover sites in cherry virus A isolates detected by recombination detecting programs

Recombinant/ phylogroup	Parental isolates ^b		Begin/End	Methods ^c	<i>P</i> -value
	Major parent (% identity)/ phylogroup	Minor parent (% identity)/ phylogroup			
KY510893.3137-9A1-13TF101.N34.cherry/GI	KY510907.3165-1A1-13TF120.N7.cherry/99.8/GI	KX370827.ChYT52.cherry.China/99.1/GII	6,342/7,434	RGMCS	4.013×10^{-81}
KY510866.1639-1B2-13C231.N7.cherry/GI	MF062119.Niagara-D22.cherry.Canada/98.1/GI	KY510855.3137-4B1-13C215.N7.cherry/95.4/GVII	5,991/7,431	RGMCS	4.719×10^{-59}
LC523017.VIC18.apricot.Australia/GII	MZ291923.19SP014/97.6/GII	KY445749.WY.apricot.Korea/99.9/GIIIA	788/980	RGBMCS	1.503×10^{-24}
	KY510865.1639-1B2-13C231.N3.cherry/92.1/GII	KY445749.WY.apricot.Korea/99.8/GIIIA	1,265/2,670	RGBMCS	2.497×10^{-119}
	KY510865.1639-1B2-13C231.N3.cherry/97.8/GII	KY445749.WY.apricot.Korea/99.9/GIIIA	5,003/5,362	RGBMCS	7.747×10^{-52}
	LC523017.VIC18.apricot.Australia/97.2/GII	KY510909.3165-1A1-13TF120.N9.cherry/99.6/GII	360/7,254	RGBMCS	2.944×10^{-43}
MZ291923.19SP014/GII	LC523017.VIC18.apricot.Australia/97.0/GII	KY510909.3165-1A1-13TF120.N9.cherry/93.8/GII	82/7,358	RGBS	1.137×10^{-12}
KY510845.1819-2H1-3C202.N10.cherry/GIV	KY510882.1162-21P4-13C260.N11.cherry/99.2/GIV	KY510848.1819-12A3-13C206.N13.cherry/99.9/GI	5,465/7,431	RGBMCS	4.408×10^{-150}
KY510859.1286-1A2-13C222.N8. Japanese cherry/GVI	KY510858.1286-1A2-13C222.N6.cherry/86.2/GV	KY510845.1819-2H1-13C202.N10.cherry/84.0/GIV	4,884/5,463	RGBCS	3.861×10^{-15}
KY510862.1286-1A2-13C222.N8.cherry/GVI	KY510858.1286-1A2-13C222.N6.cherry/86.2/GV	KY510845.1819-2H1-13C202.N10.cherry/84.0/GIV	4,888/5,467	RGBCS	4.695×10^{-15}
LC523003.TAS4S1.cherry.Australia/GVI	KY510858.1286-1A2-13C222.N6.cherry/86.6/GV	KY510845.1819-2H1-13C202.N10.cherry/85.1/GIV	4,830/5,396	RGBCS	4.695×10^{-15}
MK847263.GBVC-001.cherry.Belgium/GVI	KY510858.1286-1A2-13C222.N6.cherry/85.9/GV	GIV-KY510845.1819-2H1-13C202.N10.cherry/85.5/GIV	4,877/5,461	RGBCS	4.695×10^{-15}
LC523011.LV27.cherry.Australia/UN ^a	X82547.1-CVA-cherry/99.4/GI	LC523012.LV35S1.cherry.Australia/99.7/UN	3,826/4,596	RGBMCS	3.948×10^{-114}
	LC523001.TAS2S1.cherry.Australia/97.5/GI	KY510865.1639-1B2-13C231.N3.cherry/99.2/GII	6,306/7,364	RGBMCS	1.366×10^{-135}
LC752551.CNU-1.cherry.Korea/UN	LN879388.WK.cherry plum.Australia/97.7/GIIIB	KY510869.1819-6A113C233.N9.cherry/97.5/GI	1,382/1,463	RGBS	8.739×10^{-14}
	LN879388.WK.cherry plum.Australia/95.2/GIIIB	KY510900.3137-10C1-13TF109.N36.cherry/99.0/GI	1,571/2,158	RGBMS	5.128×10^{-39}
	CVA.Iran/cherry.97.2/GIIIB	LC523009.TAS12S3.cherry.Australia/99.6/GI	3,358/3,597	RGBMS	4.421×10^{-24}
	KY510873.1185-1A1-13C244.N6.cherry/96.0/GIIIB	KY510910.3234-1A1-13TF122.N26.cherry/99.5/GI	4,409	RGBMS	5.216×10^{-39}
MK847264.GBVC-CVA-002.cherry.Belgium/UN	KY510855.3137-4B1-13C215.N7.cherry/92.9/GVII	MK847265.GBVC-CVA-003.cherry.Belgium/98.9/GI	2,359/2,893	RGBMCS	4.590×10^{-37}
	KY510908.3165-1A1-13TF120.N8.cherry/94.2/GVII	MF062118.Niagara-B1.cherry.Canada/99.9/GI	3,057/3,485	RGBMCS	4.590×10^{-37}
	MZ291924.19SP016/95.9/GVII	LC437353.DG-FC9.Cherry.Korea/98.1/GI	1,280	RGBMCS	8.959×10^{-43}
	KU215411.Rannaja-46.sour cherry.Czech-Republic/89.9/GVII	MK847265.GBVC-CVA-003.cherry.Belgium/98.6/GI	873/5,447	RGBMS	6.919×10^{-68}
LC523015.VIC10.cherry.Australia/UN	KY510913.3332-1C1-13TF128.N8.cherry/93.9/GV	LC523012.LV35S1.cherry.Australia/99.2/UN	500/755	RGBMCS	4.781×10^{-20}
	KY510902.3137-14A1-13TF111.N28.cherry/95.9/GV	LC523012.LV35S1.cherry.Australia/95.6/UN	2,918/3,356	RGBMCS	3.128×10^{-24}
	LC523002.TAS2S2.cherry.Australia/94.0/GV	LC523008.TAS12S2.cherry.Australia/99.9/UN	3,837/7,363	RGBMCS	1.638×10^{-650}
LC422952.JK2.apricot.India/UN	KY510857.2030-1D1-13C217.N3B.cherry/97.4/GVII	MZ291922.19SP013/99.3/GIIIB	5,579/7,380	RGBMCS	7.329×10^{-174}

^aUN: grouped or divergent isolates

^bParental isolate means the most likely isolate among analyzed isolates.

^cR, G, B, M, C, and S indicate detection by RDP, GENCONV, BOOTSCAN, MAXCHI, CHIMAERA and SISCAN methods, respectively, with the presented highest *P*-value being that determined by the method.