

Table S2 Crossover Primers

Progeny	Base	Left Primer	Base	Right Primer
1a	6,601,201	caccttccaccttccacct	6,602,014	atgcatgccaagatgtgaac
1b	8,000,672	gtgcattcgtgtcattctt	8,001,371	ctgtttgatcggtcttttt
1c	12,813,050	ccatcaaagcatcaacacca	12,813,882	ttacgtgggcatgactagga
	12,813,930	ttttcgtcgcacaataga	12,814,137	ttacgtgggcatgactagga
	12,813,399	ttaaagcaaggaccagcaa	12,814,631	ttgcactaaccaattacatcg
1d	15,696,200	cccaagtccagccatcttta	15,698,261	agctctttggttggcttgaa
1e	5,441,030	gggcttgcacacacacatc	5,441,986	tgtcagctcttccttcgat
1e	16,511,710	gcggcttcagtgagcaagt	16,514,291	cggcatggtgtattatgcaa
	16,512,296	tatgcaactggcaaaagtg	16,512,489	cgtgatcgcattcaaaa
	16,513,120	ttcctttcgtttcgactct	16,513,322	caaagcaactccgcttctt
	16,513,698	cttattacgggcaaacgtg	16,513,860	aacaactcaccaggccaaac
2a	11,992,619	gaatggcatggaatggaatc	11,996,385	tggcatatccactgttttgc
	11,993,091	ccaagatctggcagaaaat	11,993,325	tgcgacttcaatggatcaaa
	11,993,886	ctgcactgggaaaaacgagt	11,994,084	ccacgaatggcgaagtaaat
	11,994,587	tggatgaacagtgttgggaaa	11,994,818	cagcacaacgtcaaaaagga
	11,995,628	aatcctgcatccacctcatc	11,995,856	gtatcgccaaggagtgaggta
2a	19,451,000	gtgtgtcgcactgtctctt	19,453,357	aagtttaataaaagtttgcggttt
	19,451,532	cgggattgtgaaagtgtct	19,451,728	gatccccacggtatcttcaa
	19,452,199	gaagaaggacgaacggatga	19,452,428	gccgacaagtttgtgtcac
	19,453,041	ggaatccaacacaacgaat	19,453,244	tctgataggaaggcactcg
2c	8,833,961	tgtggcagcgtttattgttt	8,834,509	gcccctcatcacgaaactg
2d	2,413,018	tattttgtctccccctttg	2,414,432	gggagctgcactgtgtgt
	2,413,649	ctttcgaaacatcccaaaa	2,413,798	ttgttgatttcaatgcaga
3a	4,860,618	gggattgttctcaggctcaa	4,861,822	tgagatgttagcagcagtg
3b	8,862,505	tgaatacaaggcgaatagca	8,863,092	tttctctcggctgctttgt
	8,862,621	ttcgttattccgctcatt	8,863,678	aagcttttgggcatgattg
	8,863,918	tgattgtctcgagcagttgg	8,864,477	aaacaccaagtgagcagcaa
4a	11,968,316	gatgatgagcagcagcaaga	11,970,690	attctgccacctgtctgtc
	11,969,629	gcacagacagcgagactgag	11,969,821	ttgactggcttcaaatacg
	11,970,201	ccccatttgtatgtgtgtg	11,970,398	ctcaatcttcggctcgaaac
4a	19,291,414	ggttgcctaaagttgcttagatgg	19,293,324	aaatgatagcggagagaaccaa
	19,291,958	cagaggctaaccggtgaag	19,292,145	ttgaagccgttctggttcc
	19,292,361	cccgtcaatttgaacaat	19,292,610	cgggctaagccagactacag
	19,292,784	atcgttggctattgcacgtc	19,292,977	ggtggccaacatttgcac

Primers used to validate the crossovers observed in the WGS data. Multiple primers were used to sequence segments which spanned more than approximately 500bp. One PCR reaction was done for each segment. Validations were repeated at least in triplicate.