

Supplementary data

Mapping QTLs controlling cooking and eating quality indicators of Iranian rice using RILs across three years

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Supplementary Table 1. A complete list of RILs genotypes.

Name		Trait Means of Three Years									
		AC	GT	PKV	HPV	BDV	CPV	CSV	SBV	PeT	PaT
Hashemi	Parent♂	19.41	4.40	274.3	188	86.1	321.5	133.5	47.2	6	83.6
Nemat	Parent♀	27.51	7.00	338.8	309.5	29.4	434.3	124.8	97.5	6.3	75.9
HN1	RIL-Line	25.37	6.77	276.76	243.18	33.58	340.35	97.17	63.58	6.72	84.48
HN2	RIL-Line	22.13	4.87	233.18	201.40	31.78	316.08	114.68	82.90	6.27	85.34
HN3	RIL-Line	22.27	6.27	250.36	213.28	37.08	330.08	116.81	79.72	6.56	85.69
HN4	RIL-Line	21.83	4.87	248.92	172.64	76.28	296.97	124.33	48.06	5.80	78.81
HN5	RIL-Line	24.20	6.97	219.87	190.38	29.50	292.82	102.44	72.94	6.36	81.32
HN6	RIL-Line	26.27	6.70	280.49	245.78	34.71	333.92	88.14	53.43	6.64	79.63
HN7	RIL-Line	25.00	7.00	272.03	225.32	46.71	303.03	77.71	31.00	6.98	86.32
HN8	RIL-Line	24.23	6.90	262.49	230.50	31.99	284.29	53.79	21.81	7.00	87.38
HN9	RIL-Line	21.80	6.77	270.14	229.75	40.39	324.65	94.90	54.51	6.96	80.96
HN10	RIL-Line	24.27	5.03	293.44	251.21	42.24	376.56	125.35	83.11	6.19	78.69
HN11	RIL-Line	23.63	5.43	295.68	241.61	54.07	364.35	122.74	68.67	6.31	79.35
HN12	RIL-Line	23.47	7.00	304.43	271.28	33.15	384.72	113.44	80.29	6.94	87.37
HN13	RIL-Line	23.37	6.97	300.46	265.72	34.74	348.86	83.14	48.40	6.96	83.95
HN14	RIL-Line	22.03	6.37	281.71	237.53	44.18	375.56	138.03	93.85	6.44	85.14
HN15	RIL-Line	24.70	7.00	308.32	268.83	39.49	350.58	81.75	42.26	6.99	83.49
HN16	RIL-Line	24.27	6.70	255.10	205.58	49.51	322.86	117.28	67.76	6.30	76.63
HN17	RIL-Line	26.00	7.00	266.54	239.99	26.56	338.38	98.39	71.83	6.52	75.28
HN18	RIL-Line	26.57	7.00	314.50	261.89	52.61	394.78	132.89	80.28	6.66	79.63
HN19	RIL-Line	20.57	5.07	298.31	262.14	36.17	403.43	141.29	105.12	6.53	84.04
HN20	RIL-Line	18.60	4.80	269.61	222.01	47.60	419.63	197.61	150.01	6.40	84.06
HN21	RIL-Line	21.53	6.87	268.46	230.58	37.88	419.35	188.76	150.89	6.39	85.45
HN22	RIL-Line	22.67	7.00	242.56	212.47	30.08	333.08	120.61	90.53	6.77	86.04
HN23	RIL-Line	23.33	6.80	248.51	214.26	34.25	305.78	91.51	57.26	6.71	80.70
HN24	RIL-Line	21.17	4.83	284.89	207.64	77.25	335.07	127.43	50.18	6.08	78.73
HN25	RIL-Line	18.27	6.43	302.64	198.07	104.57	310.08	112.01	7.44	5.89	76.61
HN26	RIL-Line	21.10	4.63	282.21	190.26	91.94	295.76	105.50	13.56	5.96	78.72
HN27	RIL-Line	23.17	4.37	310.13	271.47	38.65	351.36	79.89	41.24	6.87	80.01
HN28	RIL-Line	22.80	7.00	325.92	277.25	48.67	418.33	141.08	92.42	6.87	88.53
HN29	RIL-Line	23.53	7.00	244.99	210.96	34.03	316.81	105.85	71.82	6.83	86.57
HN30	RIL-Line	16.67	6.90	325.35	219.18	106.17	360.68	141.50	35.33	6.07	80.29

HN31	RIL-Line	21.33	6.90	252.92	210.29	42.63	337.22	126.93	84.31	6.46	81.36
HN32	RIL-Line	22.03	6.93	225.69	191.49	34.21	307.28	115.79	81.58	6.50	84.11
HN33	RIL-Line	25.93	7.00	314.44	295.11	19.33	405.31	110.19	90.86	6.73	83.55
HN34	RIL-Line	25.97	7.00	278.90	255.46	23.44	326.07	70.61	47.17	6.82	82.92
HN35	RIL-Line	26.03	7.00	312.72	281.65	31.07	404.64	122.99	91.92	6.82	86.34
HN36	RIL-Line	24.47	5.20	320.65	266.90	53.75	394.39	127.49	73.74	6.37	79.00
HN37	RIL-Line	23.13	5.90	294.29	252.67	41.63	378.32	125.65	84.03	6.53	78.46
HN38	RIL-Line	20.53	5.20	280.15	243.89	36.26	349.13	105.24	68.97	6.66	79.96
HN39	RIL-Line	26.40	7.00	299.06	262.49	36.57	330.99	68.50	31.93	6.91	74.78
HN40	RIL-Line	23.67	5.60	302.53	268.89	33.64	378.89	110.00	76.36	6.70	79.77
HN41	RIL-Line	20.93	4.80	303.47	224.29	79.18	358.00	133.71	54.53	6.21	77.93
HN42	RIL-Line	17.97	6.80	311.36	222.36	89.00	330.36	108.00	19.00	6.23	76.61
HN43	RIL-Line	23.93	6.57	256.60	219.57	37.03	341.71	122.14	85.11	6.66	86.99
HN44	RIL-Line	27.00	5.33	313.24	273.68	39.56	418.56	144.88	105.32	6.32	79.33
HN45	RIL-Line	20.93	5.23	281.93	229.07	52.86	371.32	142.25	89.39	6.41	79.87
HN46	RIL-Line	19.37	4.83	270.78	215.65	55.13	394.65	179.00	123.88	6.22	83.01
HN47	RIL-Line	22.77	4.47	323.58	250.42	73.17	379.21	128.79	55.62	6.21	81.03
HN48	RIL-Line	26.50	6.97	289.63	259.60	30.03	357.00	97.40	67.38	6.72	85.54
HN49	RIL-Line	25.53	5.00	317.43	273.64	43.79	403.04	129.40	85.61	6.30	78.99
HN50	RIL-Line	24.83	7.00	279.87	253.03	26.85	337.40	84.37	57.53	6.72	77.41
HN51	RIL-Line	22.87	5.80	282.63	241.22	41.40	335.07	93.85	52.44	6.81	80.39
HN52	RIL-Line	25.63	6.73	310.11	276.00	34.11	366.65	90.65	56.54	6.86	80.55
HN53	RIL-Line	21.53	6.33	284.49	247.22	37.26	368.54	121.32	84.06	6.61	83.50
HN54	RIL-Line	20.47	3.54	316.42	241.72	74.69	381.32	139.60	64.90	6.18	82.23
HN55	RIL-Line	26.27	7.00	336.82	295.33	41.49	390.03	94.69	53.21	6.91	83.68
HN56	RIL-Line	25.53	6.20	303.39	262.65	40.74	372.99	110.33	69.60	6.36	79.08
HN57	RIL-Line	24.43	4.77	311.76	255.12	56.64	387.39	132.26	75.63	6.13	78.99
HN58	RIL-Line	20.00	5.00	280.03	228.96	51.07	342.49	113.53	62.46	6.36	79.75
HN59	RIL-Line	23.67	6.97	279.50	246.94	32.56	370.89	123.94	91.39	6.68	83.92
HN60	RIL-Line	25.60	7.00	308.14	256.33	51.81	337.83	81.50	29.69	6.90	79.12
HN61	RIL-Line	24.83	6.60	287.92	252.25	35.67	370.93	118.68	83.01	6.54	79.33
HN62	RIL-Line	23.33	5.00	283.74	249.97	33.76	369.88	119.90	86.14	6.38	82.23
HN63	RIL-Line	21.57	6.90	227.63	186.65	40.97	272.15	85.50	44.53	6.81	85.40
HN64	RIL-Line	21.23	5.07	292.44	248.86	43.58	340.60	91.74	48.15	6.61	80.43
HN65	RIL-Line	23.70	5.70	230.21	199.50	30.71	277.92	78.42	47.71	6.52	82.53
HN66	RIL-Line	22.00	4.83	250.53	199.33	51.19	318.31	118.97	67.78	6.29	78.83
HN67	RIL-Line	26.10	6.97	262.11	231.76	30.35	319.19	87.43	57.08	6.69	77.18
HN68	RIL-Line	24.90	5.57	271.32	246.21	25.11	346.38	100.17	75.06	6.59	81.07
HN69	RIL-Line	24.23	6.03	332.31	300.71	31.60	424.43	123.72	92.13	6.49	82.23
HN70	RIL-Line	25.67	5.23	311.81	284.18	27.63	399.75	115.57	87.94	6.61	81.59
HN71	RIL-Line	25.80	7.00	288.26	248.69	39.57	316.36	67.67	28.10	6.89	83.83
HN72	RIL-Line	25.53	6.83	238.79	209.56	29.24	274.26	64.71	35.47	6.89	84.75
HN73	RIL-Line	25.00	7.00	349.42	299.58	49.83	406.54	106.96	57.13	6.80	78.28
HN74	RIL-Line	19.73	4.93	298.18	247.47	50.71	418.78	171.31	120.60	6.51	84.98

HN75	RIL-Line	24.97	7.00	272.96	247.75	25.21	324.60	76.85	51.64	6.82	83.29
HN76	RIL-Line	24.63	7.00	289.31	255.03	34.28	322.92	67.89	33.61	6.92	84.87
HN77	RIL-Line	24.60	5.50	333.83	302.39	31.44	431.22	128.83	97.39	6.64	81.47
HN78	RIL-Line	24.47	5.90	289.50	262.81	26.69	362.85	100.04	73.35	6.80	81.16
HN79	RIL-Line	25.87	7.00	268.56	253.54	15.01	356.24	102.69	87.68	6.56	81.60
HN80	RIL-Line	26.13	6.90	295.58	263.94	31.64	358.36	94.42	62.78	6.64	81.97
HN81	RIL-Line	26.17	4.77	336.14	294.39	41.75	395.97	101.58	59.83	6.79	82.12
HN82	RIL-Line	24.53	6.97	321.14	249.60	71.54	368.01	118.42	46.88	6.93	85.66
HN83	RIL-Line	22.33	5.60	315.81	273.03	42.78	422.15	149.13	106.35	6.77	84.32
HN84	RIL-Line	25.90	5.73	326.83	275.03	51.81	407.31	132.28	80.47	6.21	78.73
HN85	RIL-Line	24.13	4.97	327.92	265.63	62.29	383.78	118.15	55.86	6.28	80.81
HN86	RIL-Line	25.13	6.87	241.89	215.03	26.86	281.99	66.96	40.10	6.79	85.38
HN87	RIL-Line	25.67	4.83	304.86	254.64	50.22	379.44	124.81	74.58	6.21	80.27
HN88	RIL-Line	22.07	5.93	273.86	216.72	57.14	329.50	112.78	55.64	6.24	80.93
HN89	RIL-Line	25.23	6.73	262.50	236.25	26.25	328.36	92.11	65.86	6.80	86.21
HN90	RIL-Line	25.63	5.67	318.96	283.19	35.76	395.63	112.43	76.67	6.51	80.58
HN91	RIL-Line	24.17	4.93	339.44	292.50	46.94	413.21	120.71	73.76	6.63	79.97
HN92	RIL-Line	22.07	6.93	252.82	226.21	26.61	363.26	137.06	110.44	6.60	86.29
HN93	RIL-Line	26.30	7.00	327.24	287.74	39.50	373.08	85.35	45.85	6.97	86.33
HN94	RIL-Line	23.53	7.00	278.14	225.79	52.35	303.32	77.53	25.18	6.79	87.53
HN95	RIL-Line	22.23	4.60	298.81	212.17	86.64	338.24	126.07	39.43	6.03	81.70
HN96	RIL-Line	25.17	6.97	313.44	256.57	56.87	370.78	114.21	48.79	6.84	84.34
HN97	RIL-Line	22.20	4.73	314.51	226.26	88.25	391.50	165.24	76.99	6.11	80.03
HN98	RIL-Line	23.30	4.53	304.43	268.29	36.14	373.11	104.82	68.68	6.54	81.33
HN99	RIL-Line	23.97	5.33	321.78	282.17	39.61	361.78	79.61	40.00	6.78	80.15
HN100	RIL-Line	25.70	7.00	262.32	239.21	23.11	310.03	70.82	47.71	6.82	83.94
HN101	RIL-Line	26.23	7.00	312.92	273.72	39.19	369.31	95.58	56.39	6.90	84.36
HN102	RIL-Line	21.50	7.00	218.76	198.07	20.69	343.39	145.32	124.63	6.73	89.26
HN103	RIL-Line	25.10	4.97	303.01	275.57	27.44	410.31	134.74	107.29	6.60	80.88
HN104	RIL-Line	24.53	5.27	308.83	281.72	27.11	424.83	143.11	116.00	6.53	81.70
HN105	RIL-Line	25.50	5.23	300.51	267.76	32.75	397.08	129.32	96.57	6.59	81.80
HN106	RIL-Line	25.73	6.87	295.75	257.85	37.90	357.31	99.46	61.56	6.90	83.83
HN107	RIL-Line	22.87	5.60	293.40	260.32	33.08	454.36	194.04	160.96	6.74	87.38
HN108	RIL-Line	24.47	5.17	288.86	265.18	23.68	425.99	160.81	137.13	6.59	82.48
HN109	RIL-Line	26.10	7.00	277.94	252.32	25.63	361.54	109.22	83.60	6.37	74.64
HN110	RIL-Line	20.57	6.73	263.18	214.18	49.00	355.53	141.35	92.35	6.56	84.48
HN111	RIL-Line	23.27	7.00	241.64	207.03	34.61	324.49	117.46	82.85	6.29	83.25
HN112	RIL-Line	26.27	4.93	313.78	274.82	38.96	413.46	138.64	99.68	6.28	79.93
HN113	RIL-Line	24.80	5.67	286.19	247.53	38.67	388.51	140.99	102.32	6.30	79.98
HN114	RIL-Line	20.50	4.40	255.36	206.04	49.32	414.28	208.24	158.92	6.30	88.05
HN115	RIL-Line	19.80	4.23	256.79	201.63	55.17	405.86	204.24	149.07	6.26	86.30
HN116	RIL-Line	22.73	5.50	270.06	194.40	75.65	329.56	135.15	59.50	6.01	79.63
HN117	RIL-Line	25.27	6.23	290.96	278.36	12.60	401.71	123.35	110.75	6.50	83.77
HN118	RIL-Line	26.30	6.30	263.90	243.61	20.29	358.94	115.33	95.04	6.76	86.99

HN119	RIL-Line	22.20	6.57	247.38	210.58	36.79	332.28	121.69	84.90	6.60	84.43
HN120	RIL-Line	24.17	6.87	241.07	209.43	31.64	277.13	67.69	36.06	6.77	83.33
HN121	RIL-Line	21.37	4.63	270.62	190.42	80.21	318.85	128.43	48.22	5.99	78.19
HN122	RIL-Line	23.83	6.17	234.67	185.53	49.14	308.26	122.74	73.60	6.01	75.73
HN123	RIL-Line	24.30	6.23	288.10	244.60	43.50	419.06	174.46	130.96	6.48	82.00
HN124	RIL-Line	19.33	5.63	279.21	231.47	47.74	431.74	200.26	152.53	6.39	85.60
HN125	RIL-Line	23.63	5.70	319.47	274.87	44.60	460.25	185.38	140.78	6.50	82.78
HN126	RIL-Line	19.77	5.57	292.74	217.21	75.53	405.61	188.40	112.88	6.24	86.70
HN127	RIL-Line	24.37	6.33	278.22	231.00	47.25	333.29	102.29	55.07	6.98	86.43
HN128	RIL-Line	18.10	5.63	271.76	208.07	63.69	396.49	188.42	124.72	6.22	84.21
HN129	RIL-Line	26.37	5.90	290.69	265.79	24.90	374.22	108.43	83.53	6.61	79.00
HN130	RIL-Line	25.43	5.30	293.75	265.17	28.58	395.00	129.83	101.25	6.59	83.18
HN131	RIL-Line	24.20	4.70	331.93	287.62	44.31	455.17	167.54	123.24	6.52	85.38
HN132	RIL-Line	24.93	3.80	320.72	273.07	47.65	405.46	132.39	84.74	6.54	81.87
HN133	RIL-Line	21.57	4.70	301.51	214.58	86.93	349.43	134.85	47.92	6.13	79.21
HN134	RIL-Line	21.93	4.91	261.04	216.06	44.99	347.72	131.67	86.68	6.48	81.31
HN135	RIL-Line	21.70	6.93	232.44	207.79	24.65	353.06	145.26	120.61	6.69	87.73
HN136	RIL-Line	23.73	6.97	312.76	281.26	31.50	387.65	106.39	74.89	6.66	79.77
HN137	RIL-Line	26.03	6.87	325.50	288.50	37.00	412.67	124.17	87.17	6.50	80.94
HN138	RIL-Line	22.03	4.87	305.82	231.71	74.11	375.42	143.71	69.60	6.30	81.23
HN139	RIL-Line	25.93	4.80	309.89	275.76	34.13	405.94	130.18	96.06	6.47	81.48
HN140	RIL-Line	25.50	6.83	279.37	251.24	28.14	355.79	104.56	76.42	6.62	82.37
HN141	RIL-Line	21.73	5.10	252.04	208.92	43.13	319.99	111.07	67.94	6.56	80.69
HN142	RIL-Line	22.60	6.90	220.96	172.92	48.04	277.38	104.46	56.42	6.30	74.02
HN143	RIL-Line	25.63	7.00	235.61	212.86	22.75	291.49	78.63	55.88	6.78	86.79
HN144	RIL-Line	25.97	7.00	327.75	292.61	35.14	406.71	114.10	78.96	6.72	83.68

Supplementary Table 2. A complete list of used primers (Sequences etc.).

Locus Name	Chromosome	SSR_motif	Forward Primer Sequence	Reverse Primer Sequence	Anneal Temp
RM14	1	(GA)13	TCTCGATTCAATGTCCTCGG	CTACGTCATCATCGTCTTCCC	55
RM81	1	(TCT)10	CATCTCCGCTCTCCATGC	GGAGTTGGGGTCTTGTTCG	55
RM104	1	(AG)16	GTCCCTCCACCCAATC	TCGTCTACTGTTGGCTGCAC	55
RM128	1	(TC)3A(CT)9(TC)5	AGTCTACGTGGTGTACACGTGG	TGCGGCCTGCCGTTTGTGAG	55
RM129	1	(CT)17(TC)2	GAAATGGCAATGTGTGCG	GCCGGAGAACCCTAGCTC	55
RM200	1	(TA)23	GGCTGCTCATCAGCTGCATGCG	TCGGCAGTGGTAGAGTTTGATCTGC	55
RM243	1	(GA)16	CGCTAGGGAATTTGGATTGA	CGATGAGCAGGTATCGATGAGAAG	55
RM259	1	(CT)20	ATCGCAGCAATGCCTCGT	GGGTGTGAACAAAGACAC	55
RM265	1	(AAG)8(AG)13	ATCGATCGATCTTCACGAGG	TGCTATAAAAGGCATTCGGG	55
RM315	1	(GA)11	CGGTCAAATCATCACCTGAC	CAAGCTTGCAAGGGAAG	55
RM431	1	(GA)8	GCTGTGCATGCAAGTTCATG	ATGGTCCTCATGTTTCATGGC	55
RM486	1	(AG)17	TCCATCACCACATTCCCC	ACCCTTCTCTCGCTCTCTCC	55
RM562	1	(TC)9	TGTGAGCCTGAGCAATAACG	GAAGCGTGTGATATCGCATG	55
RM583	1	(GT)14	CATGGCCTTGTGTATGCATC	ATGCAGAGGATTGGCTTGAG	55
RM1141	1	(AG)12	TGCATTGCAGAGAGCTCTTG	CAGGGCTTTGTAAGAGGTGC	55
RM3148	1	(CA)20	GTCCTGCCTTCCTCCAGTTG	CGCGTCAAAGTCATTGCAG	55
RM3475	1	(CT)22	GTCGGTTTGCCTAGTTGAGC	TTCCTCGGTGTATGGGTCTC	55
RM3520	1	(CT)31	TGCTACTCCTCTCGCCTTTC	CACAAAAACAGTCAGCCACG	55
RM5310	1	(TC)12	TAGACAAAGCAACGGGTTCC	CGGAAGCAGGAGAATCGTAG	55
RM6141	1	(CGC)9	AAGCTTCCCAATCTGGAAC	TAGCTTAGCTGCTGCTGCTG	55
RM8097	1	(CT)17	TACATACACGTTTCATGTGCC	CGAGCGTAGGAAGACTACC	55
RM8136	1	(AT)71	ATGTAAGCTAGGTAGAGCTG	GCGTACGTACGTAAGTAATA	55
RM8235	1	(GT)20	TGCCTATTGCCTACTCACTC	GATGCTGTACAGTGTCTTCG	55
RM23	1	(AT)16	TGGGATGCAGAGTGCAGTTGGC	CGCAGGCACGGTGCCTTGTAAG	67
RM237	1	(AG)7	CCCATCCTCACCGATCTCTCTAAAC	GTGCGCACGGAGGAGGAAAGGG	61
RM5423	1	(TC)16	ATCCCACTGCAGACGTAGG	ACAGCAGCAAGGTGCCTC	55
RM1287	1	(AG)17	GGAAGCATCATGCAATAGCC	GGCCGTAGTTTGTACTGC	55
RM302	1	(CT)16	CATTCCGTCTCGGCTCAACT	CAGAGCAAGGTGGCTTGC	55
RM5	1	(AG)12	CCGCAGCGATAGAGAGAGAG	TCAAGATGATCCACACGCC	55
RM112	2	(GA)21	TGCCCTGTTATTTCTTCTCTC	GGTGATCCTTTCCATTTC	55
RM166	2	(CA)8	CACCATTGCCATCAGCACAAC	TCGCCCTCTGCTGCTTGATGGC	55
RM213	2	(GT)16TT(GT)4	TCTTGCCCGTCACTGCAGATATCC	GCAGCCCTAATGCTACAATTCTTC	

RM263	2	(CT)18	CTTAAATGGGCCACATGCG	CAAAGCTTCCGGCCAAAAG	55
RM266	2	(CT)18	TGCCCATATGGTCTGGATG	GAAAGTGGATCAGGAAGGC	55
RM279	2	(CT)18	CAAATCCCAGCTGCTGTCC	TGGGAAGAGAGCACTACAGC	55
RM324	2	(GA)21	TCCCTGTTAAGAGAGAAATC	GTGTATTTGGTGAAAGCAAC	55
RM475	2	(TATC)8	TTGTAGTCCGGGTCGTAACC	GATAGAATAGGGAGGGGGGG	55
RM525	2	(CT)12	AGAGTTATGAGCCGGGTGTG	GATTTGGCGATCTTAGCAGC	55
RM1358	2	(AG)24	GATCGATGCAGCAGCATATG	ACGTGTGGCTGCTTTTGC	55
RM3340	2	(CT)15	GCATGCGGCCAACTGATT	TCCATCATCTCGATCTTGACGAA	55
RM3355	2	(CT)15	CATATGCAATTGATGTTTCG	TTAATTCCTTGGTCTCAAATG	55
RM5390	2	(TC)14	GCAATTTAACCCTTATTCCTG	GGGAAGAAGAAAGCCATTAG	55
RM6023	2	(CCG)8	AAGGAAGCAGCGATGTGAAG	GAGCTAGAGATCACCTGGCG	50
RM6318	2	(CTT)12	TGCTGCTTCTGTCCAGTGAG	GGATCATAACAAGTGCCTCG	55
RM6842	2	(TCT)21	TAAATCGAAGGAGGGGGAAG	GGAAGAAGGAGGAGGAGGTG	61
RM7245	2	(ATCG)6	CTCGATCTGGTGACATGACG	GAAGAAGTACGCGCCCAAC	55
RM424	2	(CAG)7	CCGCTACTAATAGCAGAGAG	GGAGCTTTGTTCTTGCGAAC	55
RM16	3	(GAA)5	CGTCTTCATCATCGTCGCCCCG	GGCCCATCCCCTCGTGGATCTC	55
RM135	3	(GA)16	ACGGGCAATCCGAACAACC	TCGGGAAAACCTACCCTACC	55
RM156	3	(CT)37	GTGAATGGTCAAGTGACTTAGGTGGC	ACACAACATGTTCCCTCCCATGC	55
RM232	3	(AGG)9	AGTTGTTGGGAGGGAGAAAGGCC	AGGAGGCGACGGCGATGTCCTC	61
RM416	3	(CTT)8T3(CTT)14	GGTAAATGGACAATCCTATGGC	GACAAATATAAGGGCAGTGTGC	55
RM422	3	(CTT)18	CGAGAGAGCCATAACTACG	ACAAGACGACGAGGAGGGAC	55
RM520	3	(AAG)9	GAGCTTGCCAGAGTGGAAAG	GTTACACCGAGAGCCAGCTC	55
RM545	3	(AAG)12	GGCCCGTCCAAGAAATATTG	CGGTGAGACAGAATCCTTACG	55
RM570	3	(TAT)13	CGCAGTTGTGGATTTCACTG	TGCTCAACGTTTGACTGTCC	55
RM571	3	(CT)10	AACTCCACATGATTCCACCC	GAGAAGGTGGTTGCAGAAGC	55
RM5626	3	(AAG)11	GATCAGTCGGTCATAAACG	CACCTTCTCTTCTGCTG	55
RM5955	3	(CAC)13	TATCTCATCCACAACCTCCT	GTAGAAGCCTACTGGCTCTG	55
RM6080	3	(CCT)9	CAGAGGAAGCAAGGAGATCG	CCATCGGGAGAGAAAGAGAG	55
RM7000	3	(TTG)10	CCCTTCTTTTCAACTGAATA	TTGTAACAATGAACTCGTTC	55
RM60	3	(TC)20	TCTGTTCGCCGATTTGTTTCG	AAATGGCTTACCTGCTGTCTC	55
RM227	3	(TG)7	CCCCATTAGTCCACTCCACCACC	CCAATCAGCCTCATGCCTCCCC	61
RM8212	4	(GGA)9	CCACCGCACTTGTCTATG	TCCAATCTCACTCTCGACTC	55
RM241	4	(ACC)7	GATCCGTTTTTGTGTGCC	CCTCCTCTCCGCCGATCCTG	61
RM252	4	(CT)23	TCACATTCGGTGGCATTG	CGAGGATGGTTGTTCACTTG	55
RM307	4	(GA)21	TGCAGACATAGAGAAGGAAGTG	AGCAACAGCACAACTTGATG	55

RM1359	4	(AG)25	CCAAAGGTCAACGAATTCTA	CGGCTGGTTAATTAATCAAA	55
RM5473	4	(TC)20	TATCTGTACACGGAGATAAG	TTCTGAATTAATTAACGAGA	55
RM5687	4	(AAT)17	GATCGCTGGCGATTGATC	GACTTGTGGGGTGGTTTTTG	50
RM31	5	(GA)15	TCAGATCTACAATTCCATCC	TCGGTGAGACCTAGAGAGCC	55
RM163	5	(GA)15	TCGAAGCCATCCACCAACGAAG	TCCGTACGCCGACGAGGTCGAG	55
RM164	5	(GA)9	CACAACCTTTGAGCACCGGGTC	ACGCCTGCAGCTTGATCACCGG	55
RM267	5	(AT)38	AGCTAAGGTCTGGGAGAAACC	AAGTAGGATGGGGACAAGCTC	55
RM274	5	(CT)20	CCAAATGAACCTACATGTTG	GCATTGCAGACAGCTATTGA	55
RM289	5	(CT)20	GAGCTCCATCAGCCATTGAG	CTGAGTGCTGCTGCGACT	55
RM305	5	(GA)8	CGAGTTCGTCCAAGTGAGC	CATCCACCATTCCACCAATC	55
RM440	5	(AG)11	GGCGATTCTGGATGAAGAG	TCCCCACCAATCTTGTCTTC	55
RM598	5	(GA)25	TCCGAGTGGTTATGCAAATG	AATTGTGTCCAATGGGCTGT	55
RM1237	5	(AG)15	CTCCGCGAGCTTTAGAAGAG	CACATACTCTGGCTCTCCCG	55
RM2585	5	(AT)30	ATTTATTTAGACAGAGAGAG	ATGAATCGAATACTTATAAC	55
RM3345	5	(CT)15	AGTGTCCCTTTTCTCTCCC	GCTTCTTTGCTTCCTATGGG	55
RM3796	5	(GA)19	ATTAGCCTTAATCCACTG	ATACAAACAAACAGCTTGTG	55
RM6645	5	(GTC)8	CTTCTCTCGATCGTCTTCG	ACCAGGAAGACCACCATGAG	55
RM13	5	(GA)19	TGGTTAATCGATCGGTCGCC	CGACGGCAGATATACACGG	55
RM190	6	(CT)12	CACCACCACCACCACGCCTCTC	TCTTGGAGAGGAGGAGGCGCGG	55
W2R	6		CTTTGTCTATCTCAAGACAC	TTTCCAGCCCAACACCTTAC	55
RM217	6	T15(GT)14	TGCTGCTTGCCCTGCTTCCTTT	GAAACGAATCAATCCACGGC	
RM225	6	(AG)8	CCCTCTTAGACAGAGGCCAGAGGG	GTAGCCGAAGATGAGGCCGCCG	61
RM314	6	(AG)8A3(GA)33	CTCAACGTTGACACCTCGTG	TCCTCCATCGAGCAGTATCA	55
RM402	6	(CAT)4TAG(CAT)5	GACGATGAATCAGGAGAACG	GGCATGCATCTGAGTAATGG	55
RM508	6	(CT)14	CCCCCTCTCTCTCTCTCTC	TAGCCACATCAACAGCTTGC	55
RM527	6	(AAGA)7	CTTAAGCTCCAGCCGAAATG	CTCACCTCATCATCGCC	55
RM586	6	(GA)21	ATCAGGGAAATCCTGAAGGG	GGAAGGAGCAATCACCCTG	55
RM589	6	(AG)15	GTTCTTCAACTCCCAGTGCG	TGACGATGTGGAAGAGCAAG	55
RM1340	6	(AG)22	TTCCAAACTAGTGGGAACGC	CCTCAACGCCATGAACCTC	50
RM2615	6	(AT)30	CAGAGTGCTTTAGACAATCA	AAATTGGTAAGAGATTCTGC	55
RM3138	6	(AC)16	GTGGTGAATGTTGAGCTGCATGG	GACTGAGCCAAGTTGCTGTCTGG	50
RM4128	6	(TA)14	AGTAACTCGATCAAATAAC	AGAGTCCATATAGAATTTCA	55
RM4608	6	(TA)23	CAGGTAATAGTCATACTCCT	GGAAACTAGATTAGCTCATA	55
RM5371	6	(TC)13	GGCTAGCTTTAGCTGCGTTG	ACCCAGATCGAAACAACCTGC	55
RM6836	6	(TCT)14	TGTTGTATACCTCATCGAC	AGGGTAAGACGTTAACTTG	55

RM141	6	(GA)14	ACGTCTCGACGCATCAATGG	CACAAGAACTTCCTCGGTAC	55
RM204	6	(CTT)7	GAGATGGCCCCCTCCGTGATGG	TGCCCTCAATCGGCCACACCTC	55
RM253	6	(TC)3A(TC)18	CCGATCTCATCAACCAACTG	CTTCACGAGGATCTCAAAGG	55
RM276	6	(CT)25	ACAGTATCCAAGGCCCTGG	CACGTGAGACAAAGACGGAG	55
RM584	6	(GA)11	AGTAACGAGCATAGCAGGCG	GCAAAGCCTTCAGGAATCAG	55
RM402	6	(CAT)4TAG(CAT)5	GACGATGAATCAGGAGAACG	GGCATGCATCTGAGTAATGG	55
RM2	7	(CGT)6(CGG)5	CACGACGACGACGAGCAGCAGC	GCTCGAGGGAGAGCGACCTGCC	61
RM10	7	(GA)2A(GA)13	ACGTGTCACCGCTTCCTC	ATGTCCGGGATCTCATCG	55
RM11	7	(GA)6 - (GA)16	TCCAACATGGCAAGAGAGAG	GGTGGCATTTCGATTCCAG	55
RM134	7	(AG)6 - (AG)2T(GA)5	ATCCTACCGCTGACCATGAG	TTTGGTCTACGTGGCGTACA	55
RM214	7	(CT)13	CCGAACGCCTAGAAGCGCGTCC	CGGCGAGGTTTGCTAATGGCGG	67
RM481	7	(TTAT)5	TTCCCTCCTTTTATGGTGC	TGTTCTCCTCAGTCACTGCG	55
RM505	7	(AT)26	CTTCCACCATAAAACCGGAG	ACACCGGTGATCTTGAGCC	55
RM1364	7	(AG)26	AAGAAATTCAAAACACATGA	AAAACATCTACTTTGATCCA	55
RM5055	7	(TA)34	CGTAGGTGATATATTGATCC	GTTCAAATTTTAACTAGCCA	55
RM5481	7	(TC)21	GGCACAGAGTAGTGATGTTTCG	TGAAGCTCCAATACTCTCCC	61
RM5711	7	(AAT)24	GTCCATGCATCCATCTCTAG	ACGGAAGGAATACGTCTGTA	55
RM5720	7	(AAT)22	CCTGATAAATTGACAGTTAC	GAGAGTAGGAGTTGATAACA	55
RM6223	7	(CGG)9	CCGAAAAGTGCTTCAAGTC	TTAATTAGCAGGTGGCCTCG	55
RM7338	7	(CATC)9	CTTATCTCTCGGCAAGCAGC	CTCACACGCATGGATCAATC	55
RM7564	7	(TCGA)6	ATGCATGTGAGCATGCTAGC	AAATACCCTCTGCTCCCC	55
RM8006	7	(AT)94	TGCCGGTCTTAATTTTATC	AATGGTCCACATTAATCCAC	55
RM8263	7	(TC)13	TTTGCTGTCCCTTTGTTT	TGCAATTCAAAGTCTTAGGG	55
RM501	7	(TC)9	CCCCTTGCTAGCTTTTGGTC	CCATACCTCTTCTCCTCCCC	55
RM542	7	(AAT)6	ACCAGAGAAGCCCTCCTAGC	GTTCTGTGGTGGTCACGTTG	55
RM336	7	(GTT)14	GCTTAAGGACTTCTGCGAACC	CAACAGCGATCCACATCATC	55
RM72	8	(CTT)18	ACGCGAACAATAAACAGCC	CTTTGCTACCAGTAGATCCAGC	55
RM223	8	(CCG)8	CTTCGGCGCCGTCATCAAGGTG	CGTTGAGCAGCGGACGTTGAC	67
RM264	8	(CT)25	GAGTGAGCTTGGGCTGAAAC	GAAGGCAAGTCTTGGCACTG	55
RM331	8	{{(GT)3T2AGGGACA}2	TTGGCCTAGTGCCTCCAATC	GAGGGTACAACCTTAGGACGCA	55
RM1235	8	(AG)15	GAAAACATAAAAAGCAGAGGA	AAGCTATCCATTTTGGATTA	55
RM1959	8	(AT)19	CTATTGTACCTGCTCTCATC	ACATCGGTACTGATAATGTT	55
RM3331	8	(CT)15	CCTCCTCCATGAGCTAATGC	AGGAGGAGCGGATTTCTCTC	50
RM3572	8	(GA)12	AGTGCTGTCTGGTTTTTGGC	CCCCTCCCTTTCTTTCTTTG	55
RM5485	8	(TC)22	CTCCACAAGCTTGGCTAGG	AATGCCATCCCCTACTCATG	55



RM6208	8	(CGG)8	TCGAGCAGTACGTGGATCTG	CACACGTACATCTGCAAGGG	55
RM6356	8	(GAA)10	TTATCTGCCACCTGAGTCCC	ACTTGGCGACTCTGATCTGC	50
RM6845	8	(TGA)8	GTGACGGCAAGAGGAAGAAG	GTTCCGACAGGAACGCCAC	55
RM7356	8	(CTAT)6	CCAAGGACACATATGCATGC	GCAATTCATGGCGCTGTTC	50
RM42	8	(CAT)5(CAC)5CAT(CAC)4	CCACGAACCCTTTGCATC	GTGATGATGCGTCGGTTG	55
RM566	9	(CT)12	TCGGTGAGAACTGAGAGTACG	AAGGAGGCCATCTCAATGTG	55
RM205	9	(CGG)8	GCCGCACCCTCACTCCCTCCTC	TCTTGCCGGAGCGCTTGAGGTG	67
RM215	9	(T)12	GGTCCTGGGTCAATAATTGGGTTACC	TTGCTGCATGATCCTAAACCGG	61
RM219	9	(CCT)7	TCGCGCTTCTTCTCGTCGACG	CCCGCTTGACAGGAAGCAGCC	55
RM257	9	(CT)16	CAAAATGGAGCAGCAAGAGC	TGAGCACCTCCTTCTCTGTAG	55
RM278	9	(CT)18	GCGCTGGTGGAAATGAG	GGCATCCCTCTTTGATTCTC	55
RM288	9	(CT)14	ATGCCGCCAGTGAATAGC	CTGAGAATCCAATTATCTGGGG	55
RM316	9	(GA)17	GTAGTGAGCCTAACAATAATC	TCAACTCAGCATCTCTGTCC	55
RM1553	9	(AT)13	AATTAGAGGGTCCACATGTC	ATTACCCTCATTTTCTACGC	55
RM2144	9	(AT)22	ACATTATGAAACGGAGGAAG	GAAATGATGCATCAGCATT	55
RM171	10	(GTC)6	CATCCCCCTGCTGCTGCTGCTG	CGCCGGATGTGTGGGACTAGCG	67
RM258	10	(CT)18	GCATGGCCGATGGTAAAG	TGTATAAAACCACACGGCCA	55
RM333	10	(GA)10	CACATGGCACCAACCTCC	GCCAAGTCATCACTACTCTGG	55
RM474	10	(TA)36	TTGTAGTCCGGGTCGTAACC	GATAGAATAGGGAGGGGGGG	55
RM2887	10	(AT)38	GATCAATATGATTTTTTTTCA	TAGTCGATTACTATTGGGTA	55
RM5271	10	(TA)45	CGGTGTAGATTGTAGGTACA	GTAGTTTAGTTATTGCGCAC	55
RM5620	10	(AAG)10	TCGACTTGAAGCATCACACC	TCTGAAATGTCAAGTGGGCC	55
RM8201	10	(CT)13	TCTGTTTATAAGCGCAGCAC	GCCGGCGAGCTACTACTAC	55
RM228	10	(ATT)10	CTACATCGGCTTAGGTGTAGCAACACG	ACTTGCTCTACTTGTGGTGAGGGACTG	55
RM311	10	(GA)11	GAAGCCGTCTGTAAGTTACC	GTTTCTACCTGATCGCGAC	55
RM5474	11	(TC)21	AAAGTGTGGTGAGCATAGC	TTTGTGTTTGAGAGACGAG	55
RM181	11	(CT)9	TCCTCCCTCCCTTCGCCACTG	CGATGTTCCGCATGGCTGCTCC	61
RM206	11	(CT)11(TC)10	CCTCCTCCTACGAATCCCGCC	GGGCTTCTTCTCCGCCGGCTTC	55
RM1341	11	(AG)22	AACCTGGAGGTGCTGGTCTC	TTTCTCCCCCAACCAC	55
RM1812	11	(AT)16	CAGCTAGTGAGCTCCTAGTG	GCTAACCCACCAACTTATTC	55
RM4862	11	(TA)28	CAACTTCTGGCATAAACTA	TGGTCAAAGATATTTCAGAC	55
RM5599	11	(AAC)11	ACCCAACAACACAAAGAGGC	GGTGAATGTGTTGCTGTTGG	55
RM5997	11	(CCG)8	GCGACGACGAAGAAGCTAAC	CCCATCGATAGGGTTTCTC	55
RM7443	11	(GTTT)7	TGCTGCGTGTACTTTGGTG	AACCCTTCATCAGGCTACGC	55
RM202	11	(GAA)9	GCCTCGAGCATCATCATCAG	ATCAACCTGCACTTGCTGG	55

RM286	11	(CT)18	GATCTGCAGACTGCAGTTGC	AGCTGCAACGATGTTGTCC	55
RM519	12	(CA)10	AATCTGGGCCTGCTCTTTC	TCCTAGGGTGAAGAAAGGGG	55
RM1337	12	(AG)21	GCTGAGGAGTATCCTTTC	ACCATAGGAAGATCATCACA	55
RM7619	12	(TGTA)13	CTTGGTATGTATTGGCAGCG	GAGGCAATAGGAGGGGAGAG	50
RM7003	12	(AAAC)6	GGCAGACATACAGCTTATAGGC	TGCAAATGAACCCCTCTAGC	50
RM7376	12	(GAAA)6	TCACCGTCACCTCTTAAGTC	GGTGGTTGTGTTCTGTTTGG	50