

Supplemental Table 2. Summary of 1195 EST and gene markers that were mapped onto maize chromosomes using the RN-cM map. The genetic coordinates from the IBM2 neighbors frame linkage map (www.maizegdb.org) were downloaded August 31, 2003. For all chromosomes except 2 and 6, the IBM2 neighbors frame map included negative coordinates for one (or more) mapped locus. When this occurred, the cM coordinate for all markers on that chromosome were adjusted upwards to bring the most negative cM value to 0. The genetic coordinates from the IBM2 neighbors frame map were converted to RN-cM coordinates using the formulas described by Anderson *et al.* (2004). The RN-cM coordinates were used to position the markers on to the physical structure of the pachytene chromosomes (=synaptonemal complexes [SCs]). Marker locations on SCs are measured in μ m starting from the tip of the short arm (SA) toward the tip of the long arm (LA). Markers that occur in heterochromatin are indicated by an H in the last column.

EST/Gene Locus	Accession number (if available)	Bin	Genetic marker coordinates (cM)				Genetic marker location on SC		
			IBM2 neighbors frame coordinate	IBM2 neighbors frame coordinate (adjusted)	coordinate after conversion to RN-cM map		Marker position on SC (μ m from tip of SA)	Short (SA) or Long (LA) Arm	In hetero- chromatin (H)
Chromosome 1									
bnl(tas1h)		1.00	-55.8	0	0.0		0	SA	
csu804b(dnp)		1.00	-30.5	25.3	2.6		0.8	SA	
bnl(tas1c)		1.00	-11.7	44.1	4.5		1	SA	
phi056(tub1)		1.00	-2.3	53.5	5.5		1	SA	
csu804b(dnp)	W21728	1.00	0	55.8	5.7		1	SA	
umc1305	AI947344	1.00	0	55.8	5.7		1	SA	
umc1354	PCO091367/AY106116	1.00	0	55.8	5.7		1	SA	
umc1613	BE224827	1.00-1.01	2.5	58.3	6.0		1	SA	
tub1		1.00-1.01	2.5	58.3	6.0		1	SA	
umc1177	I001344	1.01	10.5	66.3	6.8		1.2	SA	
umc1566	W066084	1.01	16.5	72.3	7.4		1.2	SA	
fus6	W21618	1.01	24.3	80.1	8.2		1.6	SA	
cdo1081a	p-cdo1081	1.01	59.5	115.3	11.8		2.2	SA	
umc1292	W061872	1.00	61.2	117	12.0		2.2	SA	
rgpc385a(rpL5)	p-rgp	1.01	80.2	136	13.9		2.4	SA	
uaz260b(rpL5)	T15285	1.01	80.2	136	13.9		2.4	SA	
umc1363	PCO103648	1.01	83.7	139.5	14.3		2.4	SA	
umc1071	AI396561	1.01	85.2	141	14.4		2.6	SA	
umc1269	W146792	1.01	86.3	142.1	14.6		2.6	SA	

umc1977	E050729	1.01	89.2	145	14.9		2.6	SA	
umc1948	E186126	1.01	91.5	147.3	15.1		2.6	SA	
smt2	W076488	1.01	94.16	149.96	15.4		2.6	SA	
prc3	PCO061743	1.01	97.95	153.75	15.8		3	SA	
umc1160	I586523	1.01	108.3	164.1	16.8		3	SA	
umc157(chn)		1.01	114.4	170.2	17.4		3.2	SA	
umc1166	I438624	1.02	133.6	189.4	19.4		3.2	SA	
std2c(dba)		1.02	129.3	185.1	19.0		3.2	SA	
umc1568	W061641	1.02	141.8	197.6	20.3		3.4	SA	
pds1		1.02	144.28	200.08	20.5		3.6	SA	
csu691	A072461	1.02	156.88	212.68	21.8		3.6	SA	
umc1976	E050768	1.02	160.6	216.4	22.2		3.6	SA	
umc2226	PCO139382	1.02	165.8	221.6	22.7		3.8	SA	
umc1711	W562664	1.02	176.68	232.48	23.8		4	SA	
mdh4		1.12	162	217.8	22.3		3.8	SA	
csu320a	26949	1.02	184	239.8	24.6		4	SA	
cdo1387b(emp70)	p-cdo1387	1.03	201.5	257.3	26.4		4.4	SA	
gln6		1.02	198.4	254.2	26.1		4.4	SA	
umc1073	I396479	1.03	208.5	264.3	27.1		4.6	SA	
umc1403	PCO116128	1.03	210.6	266.4	27.3		4.6	SA	
csu859(gol)	21775	1.03	242.15	297.95	30.5		5.4	SA	
csu179a(hsp70)	18839	1.03	256.62	312.42	32.0		5.8	SA	
csu181a	18841	1.03	256.62	312.42	32.0		5.8	SA	
csu214b(grp)	18795	1.03	256.62	312.42	32.0		5.8	SA	
csu254b	49884	1.03	256.62	312.42	32.0		5.8	SA	
umc1479	I770469	1.03	257.4	313.2	32.1		5.8	SA	
fad8		1.02-1.03	260.7	316.5	32.4		6	SA	
p1		1.03	279.96	335.76	34.4		6.4	SA	
cdo938a	p-cdo938	1.04	323.1	378.9	38.8		7.4	SA	
csu632a	A054809	1.04	323.63	379.43	38.9		7.4	SA	
csu924(wsi)	21638	1.04	323.63	379.43	38.9		7.4	SA	
csu941	21653	1.04	323.63	379.43	38.9		7.4	SA	
umc1452	PCO097961	1.04	323.78	379.58	38.9		7.4	SA	
asg45(ptk)		1.03	323.61	379.41	38.9		7.4	SA	
umc1169	I396370	1.03-1.04	337.5	393.3	40.3		7.8	SA	

csu737(npc)	A143915	1.04	340.7	396.5	40.6		8	SA	
rgpc361(ppi)	p-rgp	1.04	340.7	396.5	40.6		8	SA	
umc1472	PCO066535	1.04	345.88	401.68	41.2		8	SA	
csu389	49903	1.04	349.88	405.68	41.6		8.4	SA	
rz672a(cgs)	p-rz672	1.04	349.88	405.68	41.6		8.4	SA	
csu649(scp)	A054821	1.04	356	411.8	42.2		8.6	SA	
uaz248a(his3)	14800	1.04	359.7	415.5	42.6		8.8	SA	
umc2227	PCO120585	1.04	360.9	416.7	42.7		8.8	SA	
umc1144	I629804	1.04	369.02	424.82	43.5		9	SA	
bcd450e	p-bcd450	1.04	383.71	439.51	45.0		9.2	SA	
uaz198d(rpL10)	14756	1.04	383.71	439.51	45.0		9.2	SA	
umc1770	CL875_1	1.04	392.16	447.96	45.9		9.6	SA	
bnl9.11b(lts)		1.04	390.8	446.6	45.8		9.4	SA	
umc1243	PCO132912	1.04	405	460.8	47.2		10.2	SA	
csu3	12526	1.04-1.05	405	460.8	47.2		10.2	SA	
rz500(stp)	p-rz500	1.05	415.59	471.39	48.3		10.6	SA	
umc1558	W066431	1.05	417	472.8	48.5		10.6	SA	
umc2025	I891276	1.05	417	472.8	48.5		10.6	SA	
umc1734	W600354	1.05	423	478.8	49.1		10.8	SA	
umc1244	PCO132912	1.05	427.57	483.37	49.5		11.2	SA	
csu263b	18825	1.05	429.39	485.19	49.7		11.4	SA	
csu653(fbn)	A072431	1.05	429.39	485.19	49.7		11.4	SA	
csu822	21741	1.05	429.39	485.19	49.7		11.4	SA	
rgpc316	p-rgp	1.05	429.39	485.19	49.7		11.4	SA	
nfd104c		1.04	432.04	487.84	50.0		11.6	SA	
uaz246c(mbf)		1.05	436.4	492.2	50.4		11.8	SA	
umc1461	I649666	1.05	438.8	494.6	50.7		11.8	SA	
uaz198c(rpL10)	14756	1.05	439	494.8	50.7		12.2	SA	
rz323a	p-rz323	1.05	439.3	495.1	50.7		12.2	SA	
umc1493	W257877	1.05	439.3	495.1	50.7		12.2	SA	
umc1676	CL346_1	1.05	450.8	506.6	51.9		12.6	SA	
rs2		1.05	457	512.8	52.6		12.8	SA	
umc1611	PCO140706	1.05	458.4	514.2	52.7		13	SA	
cdo344c(rga)	p-cdo344	1.05	460.6	516.4	52.9		13	SA	
cdo344c(rga)		1.05	460.6	516.4	52.9		13	SA	

umc1395	I820147	1.05	471.7	527.5	54.1		14.6	SA	
umc1603	W066568	1.05	475.9	531.7	54.5		14.8	SA	
umc1323	I734523	1.05	483.82	539.62	55.3		15	SA	
csu574b(eif2B)	A051886	1.05	496.6	552.4	56.6		16.2	SA	H
csu881(cys)	21609	1.06	496.6	552.4	56.6		16.2	SA	H
umc1972	E051243	1.06	503.3	559.1	57.3		16.6	SA	H
umc1754	F728720	1.06	506.8	562.6	57.7		17.2	SA	H
umc1812	W520058	1.06	508.2	564	57.8		17.2	SA	H
umc1590	W037161	1.06	517	572.8	58.7		17.8	SA	H
umc1508	G268601	1.06	521.35	577.15	59.1		18.2	SA	H
umc1811	PCO082803	1.06	526.4	582.2	59.7		18.2	SA	H
csu675a(prh)	A072449	1.06	527.03	582.83	59.7		18.4	SA	H
umc2234	PCO123428	1.06	529	584.8	59.9		18.4	SA	H
umc1123	E639668	1.06	535.1	590.9	60.6		20.6	SA	H
umc1398	I820134	1.06	540.82	596.62	61.2		23.4	LA	H
ptk3		1.05	543.99	599.79	61.6		23.8	LA	H
umc1396	I812220	1.06	548.4	604.2	62.2		24.4	LA	H
umc2235	PCO069745	1.06	550	605.8	62.4		24.8	LA	H
umc1748	W506670	1.06	553.6	609.4	62.8		25.2	LA	H
csu805	21729	1.06	558.5	614.3	63.4		25.8	LA	H
csu590(rpL17)	A051898	1.06	570.8	626.6	64.9		27.4	LA	H
ntf1	A054789	1.06	570.8	626.6	64.9		27.4	LA	H
umc1709	W566357	1.06	588.2	644	67.0		28.2	LA	H
umc1254	PCO117330	1.06	598.6	654.4	68.3		29.4	LA	
umc1122	PCO092830	1.06	599.63	655.43	68.4		29.4	LA	
umc2236	PCO153431	1.06	604.8	660.6	69.1		29.4	LA	
umc1486	G266195	1.06	608.03	663.83	69.5		29.4	LA	
wsu(nia4)		1.06	610.23	666.03	69.7		29.4	LA	
umc2237	CL28_-2	1.07	618.5	674.3	70.7		30	LA	
umc1278	I964577	1.06	624.34	680.14	71.5		30.2	LA	
csu374b	27564	1.07	642.3	698.1	73.6		31.6	LA	
umc1706	PCO114642	1.07	643.21	699.01	73.8		31.6	LA	
bcd98a	p-bcd98	1.07	649.5	705.3	74.5		32.2	LA	
umc1661	PCO072788	1.07	652.61	708.41	74.9		32.4	LA	
std1b(his2B1)		1.07	664.17	719.97	76.3		32.6	LA	

hon105		1.07	683.56	739.36	78.7		34	LA	
bcd207a	p-bcd207	1.07	703.5	759.3	81.1		35.2	LA	
umc1128	l677212	1.07	711.5	767.3	82.1		35.6	LA	
umc1147	PCO101081	1.07	714.4	770.2	82.5		35.6	LA	
bcd386a	p-bcd386	1.07	717.8	773.6	82.9		36	LA	
umc1245	W011644	1.07	721.9	777.7	83.4		36.2	LA	
umc1245	l783389	1.07	721.9	777.7	83.4		36.2	LA	
rz583a(msb)	p-rz583	1.07	722.4	778.2	83.4		36.2	LA	
cdo98b	p-cdo98	1.08	744.7	800.5	86.2		37.8	LA	
csu580a(mdh)	A051891	1.08	750.2	806	86.8		38.2	LA	
csu12b(cin4)		1.07	750.23	806.03	86.8		38.2	LA	
umc2080	PCO155833	1.08	769.4	825.2	89.2		39.6	LA	
uce1	14794	1.08	770.88	826.68	89.4		39.8	LA	
uce1		1.08	770.92	826.72	89.4		39.8	LA	
umc1446	l737885	1.08	781.6	837.4	90.7		40	LA	
csH4(id1)		1.08	779.2	835	90.4		40	LA	
an1		1.08	785.3	841.1	91.1		40.4	LA	
csu66a(lhcb)		1.08	798.74	854.54	92.8		40.6	LA	
vp14		1.08	798.74	854.54	92.8		40.6	LA	
umc1991	W927818	1.08	800.7	856.5	93.0		40.8	LA	
cdj2	W244179	1.08 or 1.09	812.3	868.1	94.4		41.2	LA	
rz474b(dnaj)	p-rz474	1.09	813.6	869.4	94.6		41.2	LA	
csu696	A072465	1.08	821.5	877.3	95.6		41.8	LA	
nfc103a		1.08	819.03	874.83	95.3		41.8	LA	
cdo795a	p-cdo795	1.09	824.39	880.19	95.9		42	LA	
rz403	p-rz403	1.09	825.8	881.6	96.1		42	LA	
rth1		1.08-1.09	824.4	880.2	95.9		42	LA	
csu222a(wsi)	18802	1.09	847.3	903.1	98.7		42.8	LA	
glb1		1.09	839.3	895.1	97.7		42.8	LA	
umc1298	l947839	1.09	850.26	906.06	99.1		43	LA	
rgpc746(rnp)	p-rgp	1.09	854.71	910.51	99.6		43.4	LA	
tbp1		1.09	857.65	913.45	100.0		43.4	LA	
msu2(iaglu)		1.09	862.1	917.9	100.5		43.4	LA	
umc1411	G266452	1.09	863.91	919.71	100.8		43.6	LA	
bcd1072c(hsp70)	p-bcd1072	1.09	864.6	920.4	100.8		43.6	LA	

uat1(lox)	18426	1.09	864.6	920.4	100.8		43.6	LA	
csu554a(rnh)	A051871	1.09	874.3	930.1	102.0		43.6	LA	
umc2028	W313331	1.09	875.57	931.37	102.2		43.6	LA	
umc197a(rip)		1.09	864.6	920.4	100.8		43.6	LA	
lpe1		1.09	871.9	927.7	101.7		43.6	LA	
ole4		1.09	873.5	929.3	101.9		43.6	LA	
umc1431	E345635	1.09	886.1	941.9	103.5		43.8	LA	
cdo122a(nad)	p-cdo122	1.10	887.5	943.3	103.6		43.8	LA	
umc107a(croc)		1.03	886.9	942.7	103.6		43.8	LA	
csu272a(tua)	18832	1.10	898.44	954.24	105.0		44.4	LA	
csu272a(tua)	49910	1.10	898.44	954.24	105.0		44.4	LA	
tua1			898.44	954.24	105.0		44.4	LA	
tua2		1.09	898.44	954.24	105.0		44.4	LA	
adh1		1.10	910.77	966.57	106.5		44.8	LA	
rz630a(sat)	p-rz630	1.10	920.1	975.9	107.6		45	LA	
umc1774	PCO070449	1.10	923.02	978.82	108.0		45	LA	
bcd450b	p-bcd450	1.10	926.84	982.64	108.4		45	LA	
csu261	49885	1.10	932.94	988.74	109.2		45.2	LA	
mta1	14711	1.10	932.94	988.74	109.2		45.2	LA	
uat4a	35891	1.10	932.94	988.74	109.2		45.2	LA	
uaz130a(tlk)	18675	1.10	934.5	990.3	109.4		45.2	LA	
csu137b(ap)		1.10	932.92	988.72	109.2		45.2	LA	
mta1		1.10	932.92	988.72	109.2		45.2	LA	
phi1		1.10	963.6	1019.4	112.9		45.8	LA	
umc1500	PCO131781	1.11	985.12	1040.92	115.6		46	LA	
cdo87b(ptk)	p-cdo87	1.11	1006.9	1062.7	118.2		46.6	LA	
umc1553	W066927	1.11	1007.6	1063.4	118.3		46.6	LA	
umc1421	I746192	1.11	1010.2	1066	118.6		47	LA	
umc1681	PCO082497	1.11	1014.9	1070.7	119.2		47	LA	
umc1129	I673868	1.11	1019.1	1074.9	119.7		47	LA	
csu604a(trh)	A054789	1.11	1021.4	1077.2	120.0		47	LA	
umc1111	PCO137541	1.11	1022.6	1078.4	120.2		47	LA	
umc1737	W498363	1.11	1029.98	1085.78	121.1		47.2	LA	
umc1118	I691735	1.11	1034.3	1090.1	121.6		47.2	LA	
ccr1	A051888	1.11	1037.78	1093.58	122.0		47.4	LA	

csu381	27569	1.11	1037.78	1093.58	122.0		47.4	LA	
csu536(ccr)	A030716	1.11	1037.78	1093.58	122.0		47.4	LA	
csu663b(psaD)	A072440	1.11	1037.78	1093.58	122.0		47.4	LA	
umc1538	W134457	1.11	1047.05	1102.85	123.1		47.4	LA	
umc1744	W506953	1.11	1051.1	1106.9	123.6		47.4	LA	
csu134a(thf)	12731	1.11	1054.7	1110.5	124.1		47.8	LA	
chi1		1.10	1070.58	1126.38	126.0		47.8	LA	
cdo457b	p-cdo457	1.11	1091.83	1147.63	128.6		48.2	LA	
umc1331	I881368	1.11	1096.5	1152.3	129.2		48.2	LA	
umc2243	PCO084264	1.11	1098.4	1154.2	129.4		48.2	LA	
umc2045	PCO083930	1.11	1099.3	1155.1	129.5		48.2	LA	
fdx3		1.11	1098.4	1154.2	129.4		48.2	LA	
umc1725	W600661	1.11	1113.2	1169	131.2		48.6	LA	
umc1605	F727826	1.11-1.12	1117.1	1172.9	131.7		48.6	LA	
umc1819	W331280	1.12	1119.2	1175	132.0		48.6	LA	
umc2244	CL778_1	1.12	1120.3	1176.1	132.1		48.6	LA	
csu865(phb)		1.11	1113.2	1169	131.2		48.6	LA	
tufm1	PCO131873	1.11	1121.9	1177.7	132.3		48.8	LA	
acp4		1.12	1122.42	1178.22	132.4		48.8	LA	
Chromosome 2									
csu1192(apx)	49455	2.00	0		0.0		0	LA	
umc2246	PCO073836	2.03	3.1		0.6		0.2	SA	
bnl(tas1a)		2.00	6.8		1.3		0.2	SA	
rny(pcr)c		2.00	20.83		4.0		0.2	SA	
csu29a	12666/p-csu29	2.01	35.93		6.9		0.6	SA	
umc1165	E056970/CL7262_1	2.01	47.4		9.0		0.8	SA	
mir3b(thp)		2.02	53.23		10.2		0.8	SA	
fht1		2.01-2.02	53.39		10.2		0.8	SA	
csu12d(cin4)		2.02	55.57		10.6		0.8	SA	
cdo524	p-cdo524	2.02	70.65		13.5		1.2	SA	
umc1980	E050429	2.02	75.6		14.4		1.4	SA	
umc1265	I977889	2.02	77.7		14.8		1.4	SA	
umc1961	E128784	2.02	92		17.6		1.8	SA	
inra1(tmp)		2.03	111.88		21.4		2.6	SA	

eks1	18845	2.02	122.4		23.4		2.8	SA	
umc1756	W438392/CL3078_-1	2.02	141.6		27.0		3.2	SA	
ucsd(lfyB)		2.02	145.87		27.8		3.4	SA	
umc1262	W055951	2.02	153.1		29.2		3.6	SA	
umc1261	I987278	2.02	154.6		29.5		3.6	SA	
ufg3a(ivr)		2.03	156.01		29.8		3.6	SA	
umc1422	I746189	2.02	156.6		29.9		3.6	SA	
csu348a	27546	2.02	158.69		30.3		3.6	SA	
csu176	18837	2.03	183.64		35.0		4.6	SA	
nfd102		2.03	186.2		35.5		4.6	SA	
csu498	A661445	2.03	187.9		35.9		5	SA	
b1		2.03	197.2		37.6		5.4	SA	
ole1		2.03	216.5		41.3		6.4	SA	
umc1555	W066809	2.03	225.29		43.0		7	SA	
csu40(grx)	12674	2.03	243.3		46.4		7.8	SA	
npi248		2.04	248.54		47.4		8.2	SA	
umc1769	PCO069448	2.04	250.95		47.9		8.6	SA	
umc2247	I939727/CL11673_1	2.04	251.1		47.9		8.6	SA	
umc1326	PCO098412	2.04	266.8		50.9		11	SA	
cta1	PCO155066	2.04	267.21		51.0		11	SA	
umc2248	PCO061267	2.04	267.8		51.1		11.2	SA	
umc1448	PCO101835	2.04	269.6		51.5		11.4	SA	
umc1465	I600862	2.04	273.7		52.2		11.6	SA	
umc1579	W057010	2.04	284.4		54.3		13	SA	
prp2	14732/p-5C04F07	2.04	284.7		54.3		13	SA	
umc1580	W057010	2.04	294.2		56.1		14.6	SA	
umc2251	PCO124891	2.04	295.8		56.5		14.8	SA	H
accA		2.05	305.51		58.2		19.2	SA	H
umc1259	W056102	2.04	310.2		58.9		21.4	LA	H
umc2030	PCO082635	2.04	313.5		59.3		21.8	LA	H
umc2088	PCO151038	2.04	316.7		59.7		22.4	LA	H
umc2079	PCO062318	2.04	320.7		60.2		23	LA	H
hrp1		2.04	323.3		60.6		23.6	LA	H
csu255a	18822	2.04	327.55		61.1		24	LA	
umc1485	PCO091178	2.04	329.62		61.4		24	LA	

umc1454	I734784	2.04	339.3		62.6		24.6	LA	
umc1410	PCO087598	2.04	342.4		63.0		24.8	LA	
umc1581	I987303	2.05	344.4		63.3		25	LA	
csu4a	12527	2.05	344.91		63.4		25	LA	
csu833	21751	2.05	344.91		63.4		25	LA	
zpu1		2.05	345		63.4		25.4	LA	
csu2a	12524	2.05	349.69		64.0		26.2	LA	
csu2a	12523	2.05	349.69		64.0		26.2	LA	
hsbp1	W147093	2.05	350.84		64.1		26.2	LA	
csu850	21767	2.05	351.14		64.2		26.2	LA	
umc1459	I734535	2.05	353.79		64.5		26.4	LA	
csu337	A054804	2.05	356		64.8		26.6	LA	
rz509b(mip)		2.06	367.31		66.3		27.6	LA	
pbf1		2.06	368.1		66.4		27.6	LA	
umc1156	I600776	2.06	368.51		66.4		27.8	LA	
dia1		2.06	372.77		67.0		28.2	LA	
umc2253	PCO100178	2.05	376.1		67.4		28.8	LA	
ufg2(agp2)		2.06	376.31		67.4		29	LA	
umc2254	PCO103364	2.05	378.7		67.7		29	LA	
umc1763	W331727	2.06	379.2		67.8		29	LA	
bcd1087a		2.06	379.86		67.9		29	LA	
umc1755	W453203	2.06	380.6		68.0		29	LA	
uky1(P450)		2.06	383.98		68.4		29.2	LA	
tjp1(thp)		2.06-2.07	394.52		69.8		29.4	LA	
amy3		2.07	399.43		70.4		29.8	LA	
umc1108	I714672	2.07	401.5		70.7		30	LA	
umc1497	W224885	2.07	411.94		72.1		30.8	LA	
nfc104b		2.07	443.41		76.2		32.8	LA	
rz474c(dnaj)		2.07	446.9		76.6		32.8	LA	
uaz194a(ugu)	14797	2.07	450.4		77.1		32.8	LA	
mpik27a(zmm7)		2.07	450.99		77.1		33	LA	
ugp1	14797	2.07	451		77.1		33	LA	
chr119		2.07	474.4		80.2		33.8	LA	
umc1560	W066244	2.07	475.1		80.3		33.8	LA	
csu657(atpd)	A072434	2.08	478.7		80.7		33.8	LA	

csu154a(eif5A)	12744	2.08	478.7		80.7		33.8	LA	
csu847a(lhcb)	21764	2.08	478.7		80.7		33.8	LA	
csu658(mam)	A072435	2.08	478.7		80.7		33.8	LA	
umc1049	I391788	2.08	480.7		81.0		33.8	LA	
umc1745	W506921	2.08	485.58		81.6		34	LA	
umc1126	I677556	2.08	503.94		84.0		34.4	LA	
csu175a(eif5A)	18836	2.08	509.6		84.8		34.6	LA	
csu920a	21634	2.08	522.8		86.5		34.6	LA	
umc1604	W066069	2.08	523.5		86.6		34.6	LA	
umc1618	PCO122927	2.08	529.19		87.3		34.6	LA	
csu1b(chi)		2.07-2.08	529.5		87.3		34.6	LA	
ast(amyBS2)b		2.08	536.79		88.3		34.8	LA	
umc2085	PCO089814	2.08	544.4		89.3		35	LA	
umc1992	PCO089814	2.08	557.24		90.9		35.6	LA	
cdo38c(ntp)		2.08	573.3		93.0		35.8	LA	
rDNA5S		2.08	582.6		94.2		36.2	LA	
umc171b(oec23)		2.09	589.98		95.2		36.4	LA	
umc1551	W067107	2.09	599.38		96.4		36.6	LA	
umc1256	W065461	2.09	600.7		96.6		36.8	LA	
umc1252	PCO076355	2.09	600.9		96.6		36.8	LA	
csu728b	A143910	2.09	603.15		96.9		36.8	LA	
whp1		2.09	603.73		97.0		36.8	LA	
csu622	A054802	2.09	624.06		99.6		37.2	LA	
umc1736	W461040	2.09	629.03		100.3		37.2	LA	
srk1		2.09	642.88		102.1		37.6	LA	
srk1	21732	2.09	643.76		102.2		37.6	LA	
csu109a	12721	2.09	660.5		104.4		37.8	LA	
mha1		2.09	665.81		105.0		37.8	LA	
php20581b(tb)		2.10	695.99		109.0		38.4	LA	
chr106b		2.10	708.1		110.5		38.6	LA	
Chromosome 3									
bnl(tas4l)		3.00	-1.2	20.1	3.1		0.6	SA	
g2	F298118	3.00	2	23.3	3.6		0.6	SA	

umc1746	W506844	3.00	7.1	28.4	4.4		0.8	SA	
umc1780	W360685	3.01	11.2	32.5	5.0		0.8	SA	
umc1394	I820297	3.01	21.8	43.1	6.7		1	SA	
umc2256	PCO086478	3.01	23.4	44.7	6.9		1	SA	
umc1970	PCO101971	3.01	28.2	49.5	7.6		1	SA	
umc2071	PCO101971	3.01	29.2	50.5	7.8		1	SA	
umc2257	PCO098401	3.01-3.02	30.5	51.8	8.0		1.2	SA	
umc2049	E225034	3.01	38.7	60	9.3		1.4	SA	
csu628	A054807	3.01	44.21	65.51	10.1		1.4	SA	
e8		3.01	44.22	65.52	10.1		1.4	SA	
csu32	12669	3.02	60	81.3	12.6		2	SA	
umc1458	I734656	3.02	67.2	88.5	13.7		2	SA	
mpik24b(zmm2)		3.02	74.1	95.4	14.7		2	SA	
umc1814	W438378	3.02	86.85	108.15	16.7		2.2	SA	
cko1		3.02	97.6	118.9	18.4		2.4	SA	
csu324b(cts)		3.02	107.9	129.2	20.0		2.6	SA	
csu56b(ohp)	12687	3.03	109	130.3	20.1		2.6	SA	
csu728c	A143910	3.03	109	130.3	20.1		2.6	SA	
asg24a(gts)		3.03	109	130.3	20.1		2.6	SA	
zag4		3.02	115.93	137.23	21.2		2.8	SA	
umc2258	PCO138559	3.02-3.03	127.8	149.1	23.0		3	SA	
umc2259	PCO138559	3.02-3.03	131.7	153	23.6		3	SA	
csu230	18810	3.02	154.39	175.69	27.1		3.4	SA	
me1		3.02-3.03	160.45	181.75	28.1		3.6	SA	
umc1772	W147100	3.04	163.5	184.8	28.5		3.6	SA	
umc1425	PCO106673	3.04	165	186.3	28.8		3.6	SA	
umc1608	PCO085974	3.04	168	189.3	29.2		3.8	SA	
umc1495	W257841	3.04	177.4	198.7	30.7		4.4	SA	
umc1742	PCO085485	3.04	189	210.3	32.5		4.6	SA	
umc1717	W573521	3.04	190.8	212.1	32.8		4.8	SA	
cdo244d(crp)	p-cdo244	3.04	208.6	229.9	35.5		5.2	SA	
rz382a	p-rz382	3.04	224.1	245.4	37.9		5.6	SA	
umc2263	PCO129543	3.04	227.8	249.1	38.5		5.6	SA	
umc1504	W202518	3.04	228.2	249.5	38.5		5.6	SA	
umc1347	PCO101990	3.04	228.3	249.6	38.5		5.6	SA	

rz244b(dia)	p-rz244	3.04	230.1	251.4	38.8		5.6	SA	
csu29b	12666	3.04	236.71	258.01	39.8		6	SA	
rps25	21680	3.04	246.99	268.29	41.4		6.4	SA	
umc1968	E051808	3.04	250.4	271.7	42.0		6.8	SA	
mbd105		3.04	260.1	281.4	43.5		7.4	SA	
umc1449	I737339	3.04	269.4	290.7	44.9		8.8	SA	H
umc1527	I943646	3.04	279.3	300.6	46.4		13.3	LA	H
umc1773	W324744	3.04	280.4	301.7	46.5		13.3	LA	H
cdo344a(rga)	p-cdo344	3.04	294.5	315.8	48.0		15.3	LA	H
umc1174	I065741	3.05	299.2	320.5	48.6		15.7	LA	H
umc1300	PCO120899	3.05	301.43	322.73	48.8		15.9	LA	H
uaz288a(ppi)		3.05	305.3	326.6	49.2		16.1	LA	H
umc1693	43034	3.05	305.8	327.1	49.3		16.1	LA	H
phys2	W076184	3.05	307	328.3	49.4		16.1	LA	H
rz296b	p-rz296	3.05	309.5	330.8	49.7		17.1	LA	H
umc1102	I714980	3.05	312.8	334.1	50.0		17.3	LA	H
umc2020	PCO116620	3.05	318.2	339.5	50.6		18.1	LA	
umc1167	I461518	3.05	319.2	340.5	50.7		18.1	LA	
rz390c(cyb5)	p-rz390	3.05	319.8	341.1	50.8		18.1	LA	
csu234a(gbp)	18813	3.05	323.32	344.62	51.2		18.3	LA	
pgd2		3.05	323.35	344.65	51.2		18.3	LA	
umc1501	W216016	3.05	325.4	346.7	51.4		18.9	LA	
vp1		3.05	340.35	361.65	53.0		19.9	LA	
myb2	18844	3.05	346.8	368.1	53.7		20.3	LA	
umc2265	PCO062780	3.05-3.06	354	375.3	54.5		20.3	LA	
sps2		3.05	358.3	379.6	55.0		21.3	LA	
csu636	A054811	3.05	361.1	382.4	55.3		21.9	LA	
umc1973	E051059	3.05	371.4	392.7	56.4		22.3	LA	
umc1539	PCO100914	3.05-3.06	390.3	411.6	58.5		23.9	LA	
umc1400	CL15480_1	3.05-3.06	391.4	412.7	58.6		23.9	LA	
uaz260a(rpl5)		3.05-3.06	391.4	412.7	58.6		23.9	LA	
umc1311	PCO121964	3.06	394.8	416.1	59.0		23.9	LA	
umc1730	CL686_1	3.06	398.4	419.7	59.4		24.3	LA	
rz538b	p-rz538	3.06	411.1	432.4	60.7		24.5	LA	
umc1266	I977803	3.06	411.6	432.9	60.8		24.5	LA	

asg34b(msd)		3.06	416.1	437.4	61.3		24.7	LA	
umc2266	PCO089398	3.06	434.3	455.6	63.3		26.1	LA	
csu38a(taf)	12672	3.06	447.7	469	64.7		26.5	LA	
umc1951	E186527	3.06	456.67	477.97	65.7		26.7	LA	
csu191	18849	3.06	488	509.3	69.1		28.5	LA	
csu264	18826	3.06	488	509.3	69.1		28.5	LA	
tub6		3.06	488	509.3	69.1		28.5	LA	
umc2270	PCO116548	3.063.07	494	515.3	69.8		28.7	LA	
umc1985	E050134	3.06	495.65	516.95	70.0		28.7	LA	
bcd738b(pgk)	p-bcd738	3.06-3.07	529.4	550.7	73.6		30.3	LA	
cdo241a	p-cdo241	3.06-3.07	529.4	550.7	73.6		30.3	LA	
umc2050	PCO084029	3.07	538.2	559.5	74.6		30.5	LA	
umc1135	G265785	3.07	540.2	561.5	74.8		30.5	LA	
umc1767	PCO096090	3.07	542	563.3	75.0		30.5	LA	
umc1399	I795314	3.07	544.6	565.9	75.3		30.5	LA	
umc1690	I964529	3.07	544.6	565.9	75.3		30.5	LA	
umc1148	W191137	3.07	552.14	573.44	76.1		30.7	LA	
csu567(ces)	A051881	3.07	552.65	573.95	76.2		30.7	LA	
umc1286	I978109	3.07	566.23	587.53	77.7		30.9	LA	
umc1489	W258134	3.07	567.6	588.9	77.8		30.9	LA	
umc1404	I770907	3.07	568.3	589.6	77.9		30.9	LA	
hon108 (H1)		3.07	576.47	597.77	78.8		31.5	LA	
csu189(thr)	18847	3.08	585.5	606.8	79.8		31.7	LA	
uaz251e(rpS11)		3.08	599.3	620.6	81.3		31.9	LA	
umc1140	PCO082079	3.08	609.2	630.5	82.3		32.3	LA	
umc2275	PCO086088	3.07-3.08	610.2	631.5	82.4		32.3	LA	
cdo118	p-cdo118	3.08	611.8	633.1	82.6		32.3	LA	
mdh3		3.08	632.4	653.7	84.9		32.7	LA	
umc1320	W036981	3.08	633.8	655.1	85.0		32.7	LA	
umc1273	I948095	3.08	634.8	656.1	85.1		32.7	LA	
csu869(cah)	21715	3.09	697.2	718.5	91.9		34.3	LA	
csu125a(cah)		3.09	697.2	718.5	91.9		34.3	LA	
csu303	49891	3.09	699.2	720.5	92.1		34.3	LA	
sh2	14743	3.09	702.2	723.5	92.5		34.3	LA	
csu845	21762	3.09	702.2	723.5	92.5		34.3	LA	

bcd134b	p-bcd134	3.09	713.12	734.42	93.7		34.5	LA	
cdo962b	p-cdo962	3.09	728.48	749.78	95.3		34.7	LA	
cdo455b	p-cdo455	3.09	744.95	766.25	97.1		34.9	LA	
umc2277	PCO100950	3.08-3.09	747.5	768.8	97.4		35.3	LA	
umc1813	PCO068067	3.09	748.5	769.8	97.5		35.3	LA	
lhcb1	21615	3.09	749.22	770.52	97.6		35.3	LA	
lhcb1		3.09	755.76	777.06	98.3		35.3	LA	
umc1361	PCO142367	3.09	779.04	800.34	100.8		35.7	LA	
umc1052	I372100	3.09	793.3	814.6	102.4		35.9	LA	
umc1136	PCO086213	3.10	810.58	831.88	104.3		36.3	LA	
cyp1	12664	3.10	811.01	832.31	104.3		36.3	LA	
plt2		3.09	827.4	848.7	106.1		36.7	LA	
umc1594	W061659	3.09	828.9	850.2	106.3		36.7	LA	
umc2048	PCO092952	3.10	830.5	851.8	106.5		36.7	LA	
cyp1		3.10	831.31	852.61	106.5		36.7	LA	
Chromosome 4									
csu618(P450)		4.01	-11.63	137.57	14.6		1.2	SA	
cyp3		4.01	-6.83	142.37	15.2		1.2	SA	
umc1232	W018157	4.00	0	149.2	15.9		1.2	SA	
umc2278	PCO141566	4.00	0	149.2	15.9		1.2	SA	
mtl1		4.00-4.01	2.9	152.1	16.2		1.2	SA	
rca1		4.01	9.9	159.1	16.9		1.2	SA	
msf1	27557	4.01	15.8	165	17.6		1.2	SA	
csu221	18801	4.01	18.7	167.9	17.9		1.2	SA	
bx1		4.01	23.48	172.68	18.4		1.4	SA	
bx4		4.01	37.5	186.7	19.9		1.4	SA	
umc1276	I966861	4.01	46.07	195.27	20.8		1.8	SA	
cyp5	E997301	4.01	47.6	196.8	20.9		1.8	SA	
csu618(P450)	A054799	4.01	55.95	205.15	21.8		1.8	SA	
rz329b(bga)		4.01	64.12	213.32	22.7		2	SA	
rz329b(bga)	p-rz329	4.01	78.13	227.33	24.2		2.4	SA	
umc1757	F728658	4.01	81	230.2	24.5		2.4	SA	
umc1759	W438120	4.01	81	230.2	24.5		2.4	SA	
umc1509	W172105	4.02	100.5	249.7	26.6		2.8	SA	

inra2(prp)		4.02	106.42	255.62	27.2		3	SA	
umc1288	I948003	4.02	108.23	257.43	27.4		3	SA	
umc1294	PCO121645	4.02	108.74	257.94	27.5		3	SA	
chr117c		4.02	134.1	283.3	30.2		3.2	SA	
csu235	18814	4.03	143.4	292.6	31.1		3.6	SA	
rgpc496b(adh)	p-rgp	4.03	143.82	293.02	31.2		3.6	SA	
csu585	A051895	4.03	143.82	293.02	31.2		3.6	SA	
adh2		4.03	147.1	296.3	31.5		3.6	SA	
uaz298(PDsl)	25253	4.03	177.32	326.52	34.7		5.2	SA	
pdi1	PCO074348	4.03	187.63	336.83	35.8		5.4	SA	
umc2039	PCO065952	4.03	196.4	345.6	36.8		5.8	SA	
uaz145(ahh)	18277	4.04	198.89	348.09	37.0		5.8	SA	
pgd3		4.03	200.3	349.5	37.2		5.8	SA	
uaz145(ahh)		4.04	201.89	351.09	37.4		5.8	SA	
wip2	15276	4.03	205	354.2	37.7		5.8	SA	
rz900a(ahh)	p-rz900	4.03-4.04	211.4	360.6	38.4		6	SA	
npi386(eks)		4.04	211.4	360.6	38.4		6	SA	
csu1185	49450	4.03-4.04	211.4	360.6	38.4		6	SA	
csu855	21772	4.03-4.04	211.4	360.6	38.4		6	SA	
umc1117	I691779	4.04	218.5	367.7	39.1		6.4	SA	
umc1963	E057013	4.04	225.7	374.9	39.9		6.4	SA	
zp1		4.04	232.2	381.4	40.6		6.6	SA	
bm3		4.05	245.5	394.7	42.0		7.2	SA	
umc1969	E051731	4.05	248.6	397.8	42.3		7.4	SA	
rz143b(gpc)	p-rz143	4.05	254	403.2	42.9		8.4	SA	
gpc1		4.05	254	403.2	42.9		8.4	SA	
umc191(gpc1)		4.05	258.6	407.8	43.4		9	SA	
uaz265c(sbe)		4.05	261.77	410.97	43.7		9.4	SA	
umc193d(orp)		4.05	269.06	418.26	44.5		10	SA	H
umc1303	I947696	4.05	270.3	419.5	44.6		10.2	SA	H
umc1382	I948008	4.05	270.3	419.5	44.6		10.2	SA	H
umc1964	E056946	4.05	271.4	420.6	44.8		10.2	SA	H
umc1390	I820387	4.05	275.66	424.86	45.2		11.6	SA	H
csu509	A030699	4.05	279.9	429.1	45.7		12.6	SA	H
umc1175	I065709	4.05	287.3	436.5	46.5		13.6	SA	H

umc1451	I737158	4.05	287.75	436.95	46.5		13.6	SA	H
bnl(tas3a)		4.05	289.92	439.12	46.7		15	LA	H
bt2		4.05	292.9	442.1	47.1		17	LA	H
std1a(his2B1)		4.05	292.9	442.1	47.1		17	LA	H
csu1026	49456	4.05	292.9	442.1	47.1		17	LA	H
csu902	21623	4.05	292.9	442.1	47.1		17	LA	H
umc1953	E186707	4.05	294.3	443.5	47.3		17	LA	H
umc2054	W067090	4.05	296.47	445.67	47.5		17	LA	H
umc1791	W499383	4.05	298.1	447.3	47.7		17	LA	H
umc1142	I649544	4.05	302.5	451.7	48.2		17.2	LA	H
csu93c	12714	4.05	303.67	452.87	48.4		17.2	LA	H
umc1346	PCO064624	4.05	304.3	453.5	48.4		17.2	LA	H
nfd104e		4.05	304.97	454.17	48.5		17.4	LA	H
umc1317	PCO066955	4.05	311.7	460.9	49.3		17.6	LA	H
csu100(ptk)	12717	4.05	312.65	461.85	49.4		17.6	LA	H
csu742b(rpS7)	A143919	4.05	312.65	461.85	49.4		17.6	LA	H
csu84	12707	4.05	312.65	461.85	49.4		17.6	LA	H
csu100(ptk)		4.05	313.25	462.45	49.5		17.6	LA	H
csu428(cyb561)		4.05-4.06	327.59	476.79	51.2		19	LA	
umc2284	PCO083972	4.05	332.4	481.6	51.7		19.2	LA	
ucsd61i(zag4)		4.05-4.06	336.12	485.32	52.2		19.6	LA	
nfd105		4.06	346.72	495.92	53.4		20.4	LA	
csu640	A054815	4.06	353.72	502.92	54.2		20.6	LA	
csu587a	A051897	4.06	370.02	519.22	56.1		22.2	LA	
csu816	A661458	4.06	370.02	519.22	56.1		22.2	LA	
umc1299	PCO110502	4.06	371.06	520.26	56.3		22.2	LA	
rz567b(klc)	p-rz567	4.06	373.3	522.5	56.5		22.2	LA	
rz273a(ant)		4.06	379.3	528.5	57.2		23	LA	
csu907a	21693	4.06	382.1	531.3	57.6		23	LA	
umc1329	PCO112869	4.06	384.84	534.04	57.9		23.2	LA	
trg1		4.06	389.92	539.12	58.5		23.6	LA	
csu525(rpL17)	A661447	4.07	397.4	546.6	59.3		23.8	LA	
umc66a(lcr)		4.07	399.69	548.89	59.6		24	LA	
prh1		4.07	399.69	548.89	59.6		24	LA	
umc1194	I668269	4.07	426.86	576.06	62.8		25.2	LA	

umc1775	PCO084422	4.08	443.2	592.4	64.7		25.6	LA	
umc1476	PCO142910	4.08	462.1	611.3	66.9		26	LA	
gol1		4.08	463.3	612.5	67.1		26	LA	
pdh1	PCO114222	4.08	467.74	616.94	67.6		26.2	LA	
umc1418	I770329	4.08	471.36	620.56	68.0		26.6	LA	
pdh1		4.08	471.86	621.06	68.1		26.6	LA	
cdo127a(pyk)	p-cdo127	4.08	518.1	667.3	73.5		29	LA	
bnl17.05(ssu)		4.08	520.12	669.32	73.7		29	LA	
ssu1		4.08	522.1	671.3	74.0		29	LA	
umc1612	W224963	4.08	523.16	672.36	74.1		29.2	LA	
csu178a	49882	4.08	525.56	674.76	74.4		29.2	LA	
umc1051	I372215	4.08	525.56	674.76	74.4		29.2	LA	
c2		4.08	526.57	675.77	74.5		29.2	LA	
csu202(rpL7)		4.08	526.57	675.77	74.5		29.2	LA	
umc1132	I667779	4.08	535.5	684.7	75.5		29.4	LA	
nfd106		4.08	535.55	684.75	75.6		29.4	LA	
csu39	12673	4.08-4.09	559	708.2	78.3		30.6	LA	
umc1559	W066351	4.08-4.09	559	708.2	78.3		30.6	LA	
umc1313	PCO077438	4.08-4.09	562.74	711.94	78.7		30.8	LA	
ris2	49887	4.09	583.13	732.33	81.1		31.6	LA	
csu862b(rpL11)		4.09	597	746.2	82.8		32	LA	
umc1740	W461073	4.09	615.9	765.1	85.0		32.6	LA	
umc1328	E552579	4.09	618.1	767.3	85.2		32.6	LA	
umc2287	W506628	4.09	619.4	768.6	85.4		32.6	LA	
cdo534a(cts)	p-cdo534	4.09	623.2	772.4	85.8		32.6	LA	
csu324a(cts)	49861	4.09	623.2	772.4	85.8		32.6	LA	
cdo534c(cts)		4.09	623.4	772.6	85.9		32.6	LA	
sbp2		4.09	644.3	793.5	88.3		33.2	LA	
umc1101	I715011	4.09	655	804.2	89.6		33.2	LA	
umc2046	PCO091434	4.09	657	806.2	89.8		33.2	LA	
umc124b(chk)		4.10	672.4	821.6	91.6		33.6	LA	
umc1109	I714656	4.10	687.8	837	93.4		33.8	LA	
dba1		4.10	691.2	840.4	93.8		34	LA	
umc2288	PCO117285	4.10-4.11	692.1	841.3	93.9		34	LA	
umc1180	W215962	4.10	698.9	848.1	94.7		34	LA	

csb2a(cdc2)		4.10	704.21	853.41	95.3		34.2	LA	
umc1738	W453330	4.10	720.53	869.73	97.3		34.4	LA	
ncr(cat3)		4.10	727.63	876.83	98.1		34.4	LA	
cpn10		4.10-4.11	728.5	877.7	98.2		34.4	LA	
umc111a(psy)		4.11	728.5	877.7	98.2		34.4	LA	
umc2290	PCO080157	4.11	736.7	885.9	99.1		34.6	LA	
bip2		4.11	737.8	887	99.3		34.6	LA	
umc1716	W566135	4.11	738.46	887.66	99.4		34.6	LA	
cat3	I374559	4.11	744.1	893.3	100.0		34.8	LA	
umc1707	W600423	4.11	748.3	897.5	100.5		34.8	LA	
ufg(ivr2a)		4.10	804.83	954.03	107.1		35.4	LA	
Chromosome 5									
bnl(tas1n)		5.00	-13.3	19.1	3.1		0.6	SA	
umc1491	W231578	5.00	0	32.4	5.3		0.8	SA	
umc1240	W065571	5.00	3.4	35.8	5.9		0.8	SA	
umc1308	I795553	5.00	6.3	38.7	6.4		0.8	SA	
umc1253	I795553	5.00	22.7	55.1	9.1		1	SA	
umc2292	PCO077416	5.00	22.7	55.1	9.1		1	SA	
umc2291	E128849	5.00	23.3	55.7	9.2		1	SA	
umc1423	I746131	5.00	30	62.4	10.3		1	SA	
csu277	18834	5.00	31.5	63.9	10.5		1.2	SA	
umc1445	PCO075883	5.00	37.6	70	11.5		1.2	SA	
umc1496	W231787	5.00	38.51	70.91	11.7		1.2	SA	
csb1c(chi)		5.00	39.2	71.6	11.8		1.2	SA	
umc2022	I649653	5.00	39.4	71.8	11.8		1.2	SA	
cdo457a	p-cdo457	5.00	46.8	79.2	13.0		1.2	SA	
umc1325	CL26887_-2	5.00	54.6	87	14.3		1.2	SA	
umc1260	PCO085488	5.00	68.1	100.5	16.5		1.4	SA	
sca1	12742	5.00	68.5	100.9	16.6		1.4	SA	
csu663a(psaD)	A072440	5.01	69.5	101.9	16.8		1.4	SA	
csu33a	12670	5.01	69.5	101.9	16.8		1.4	SA	
umc1679	W258131	5-5.01	71.5	103.9	17.1		1.4	SA	
umc1523	F727716	5.01	71.9	104.3	17.2		1.4	SA	
umc1478	I770539	5.01	79.19	111.59	18.3		1.6	SA	

cdo87a(ptk)	p-cdo87	5.01	82.66	115.06	18.9		1.8	SA	
csu570a(mtl)	A051883	5.01	89.15	121.55	20.0		2	SA	
tua3		5.01	90.17	122.57	20.2		2	SA	
umc1365	PCO129062	5.01	98	130.4	21.4		2.2	SA	
umc1766	W787561	5.01	111.74	144.14	23.7		2.6	SA	
uat4b	35891	5.01	115.4	147.8	24.3		2.6	SA	
csu137a(ap)	12733	5.01	122.19	154.59	25.4		2.6	SA	
bcd450a	p-bcd450	5.01	122.19	154.59	25.4		2.6	SA	
csu137a(ap)		5.01	123.24	155.64	25.6		2.6	SA	
umc1781	F160475	5.01	124.7	157.1	25.8		2.8	SA	
rz630f(sat)	p-rz630	5.01	138	170.4	28.0		3.2	SA	
tua4	18832	5.02	147.5	179.9	29.6		3.4	SA	
umc1587	W052873	5.02	156.9	189.3	31.1		3.6	SA	
umc107b(croc)		5.02	160.2	192.6	31.7		3.6	SA	
csu554b(rnh)	A051871	5.02	161.6	194	31.9		3.6	SA	
cdo122b(nad)	p-cdo122	5.02	164.6	197	32.4		3.8	SA	
pgm2		5.02	165.17	197.57	32.5		3.8	SA	
bcd1072a(hsp70)	p-bcd1072	5.02	181.7	214.1	35.2		4.6	SA	
csu10a	12536	5.02	181.7	214.1	35.2		4.6	SA	
csu108(gbp)		5.02	185.09	217.49	35.8		4.6	SA	
uwm2(rnp)		5.02	185.09	217.49	35.8		4.6	SA	
tub4		5.03	200.46	232.86	38.3		5.2	SA	
csu164b	12748	5.03	203.3	235.7	38.8		5.8	SA	
rz474a(dnaj)	p-rz474	5.03	204.1	236.5	38.9		5.8	SA	
csic(mah9)		5.03	207.75	240.15	39.5		5.8	SA	
nfc103b		5.03	208.78	241.18	39.7		5.8	SA	
cdo795b	p-cdo795	5.03	214.5	246.9	40.6		6	SA	
csu340	49868	5.03	222.5	254.9	41.9		6.8	SA	
umc1468	PCO066795	5.03	227.33	259.73	42.7		7.2	SA	
bcd207b	p-bcd207	5.03	229	261.4	43.0		7.2	SA	
umc2035	PCO123089	5.03	231	263.4	43.3		7.6	SA	
rny(pcr)b		5.03	235.25	267.65	44.0		7.8	SA	
cdo98a	p-cdo98	5.03	239.6	272	44.7		8	SA	
csu580b(mdh)	A051891	5.03	241.2	273.6	45.0		8.2	SA	
mdh5		5.03	241.2	273.6	45.0		8.2	SA	

mdh5	18819	5.03	241.2	273.6	45.0		8.2	SA	
umc1048	I391947	5.03	242.6	275	45.2		8.4	SA	
umc1557	PCO107459	5.03	245.1	277.5	45.6		9	SA	
umc2294	PCO146059	5.03	245.5	277.9	45.7		9	SA	
umc1447	PCO108745	5.03	247.6	280	46.0		9.2	SA	
px13		5.03	251.59	283.99	46.7		9.4	SA	
rz892b(alt)	p-rz892	5.03	256.76	289.16	47.5		10.2	SA	
std2b(dba)		5.03	256.76	289.16	47.5		10.2	SA	
umc1315	PCO121636	5.03	260.2	292.6	48.1		10.6	SA	
umc1274	W036896	5.03	263.17	295.57	48.6		10.8	SA	
umc1151	I612267	5.03	263.86	296.26	48.7		10.8	SA	
rz242b	p-rz242	5.03	270.5	302.9	49.8		11.6	SA	
umc1692	PCO092487	5.03	271.5	303.9	50.0		11.6	SA	
csu419	59819	5.03	273.54	305.94	50.3		11.6	SA	
umc1609	I979725	5.03	275.9	308.3	50.7		11.6	SA	
umc2297	PCO124577	5.03	279.1	311.5	51.2		12.2	SA	
cat1	p-rz508	5.03	280.8	313.2	51.5		13.2	SA	
umc1784	W499337	5.03	281	313.4	51.5		13.2	SA	
umc1731	W563116	5.03	285.5	317.9	52.3		14	SA	H
umc1389	PCO076650	5.03	286.5	318.9	52.4		14	SA	H
umc1429	I740053	5.03	286.6	319	52.5		14	SA	H
csu252a(cdc2)	18821	5.03	297.7	330.1	54.2		20.1	LA	H
ncr(cat1)		5.03	299.25	331.65	54.5		20.1	LA	H
uaz132a(dts)	14746	5.04	301.6	334	54.8		20.7	LA	H
csu774(lhcb)	A143929	5.04	301.6	334	54.8		20.7	LA	H
csu36b(rpL19)		5.04	301.6	334	54.8		20.7	LA	H
csu670	A072444	5.04	301.6	334	54.8		20.7	LA	H
uaz275	14772	5.04	301.6	334	54.8		20.7	LA	H
umc2299	PCO147772	5.03-5.04	310	342.4	56.1		21.5	LA	H
umc1563	PCO108633	5.04	311.31	343.71	56.3		21.5	LA	H
rz87(clp)	p-rz87	5.04	312.8	345.2	56.5		21.9	LA	H
umc1060	I065782	5.04	317.6	350	57.2		22.3	LA	H
umc1162	I586426	5.04	317.69	350.09	57.2		22.3	LA	H
umc1990	E519318	5.04	318.9	351.3	57.4		22.3	LA	H
umc1747	W506690	5.04	321	353.4	57.7		22.9	LA	H

mip1		5.04	324.62	357.02	58.2		23.7	LA	
csu862a(rpL11)	21778	5.04	324.62	357.02	58.2		23.7	LA	
mip1	18838	5.04	324.62	357.02	58.2		23.7	LA	
ris1		5.04	336.77	369.17	60.0		24.5	LA	
umc1349	PCO082260	5.04	346.5	378.9	61.5		25.1	LA	
amp3		5.04	354.81	387.21	62.7		25.7	LA	
umc1092	I396369	5.04	359.04	391.44	63.3		25.7	LA	
umc1192	PCO083849	5.04	359.04	391.44	63.3		25.7	LA	
csu308	49893	5.04	371.2	403.6	65.1		26.5	LA	
uaz238(ppi)	14778	5.04	374.28	406.68	65.6		26.7	LA	
incw1		5.04	376.4	408.8	65.9		27.1	LA	
umc1966	F733113	5.04	377.9	410.3	66.1		27.1	LA	
umc1482	I739789	5.05	383.8	416.2	67.0		27.5	LA	
umc1348	PCO082260	5.04-5.05	396.09	428.49	68.8		28.1	LA	
umc2026	E475890	5.05	397	429.4	68.9		28.1	LA	
umc1264	I977895	5.05	404.9	437.3	70.1		28.5	LA	
csu93b	12714	5.05	406.19	438.59	70.3		28.7	LA	
umc2303	PCO072958	5.05	408.8	441.2	70.7		28.9	LA	
umc1155	I600986	5.05	410.8	443.2	71.0		28.9	LA	
csu173	12754	5.05	413.6	446	71.4		29.1	LA	
gl8		5.05	413.8	446.2	71.4		29.1	LA	
nbp35		5.05	413.8	446.2	71.4		29.1	LA	
nbp35	A051902	5.05	413.8	446.2	71.4		29.1	LA	
uaz190(gpc)	18686	5.05	425.08	457.48	73.1		29.7	LA	
serk2		5.05	428.3	460.7	73.6		30.1	LA	
pal1		5.05	436.68	469.08	74.8		30.9	LA	
umc1502	W216004	5.05	439.25	471.65	75.2		30.9	LA	
umc1722	W433395	5.05	455.95	488.35	77.7		31.5	LA	
cdo395b(ypt)	p-cdo395	5.06	469.6	502	79.7		31.9	LA	
umc2305	PCO072544	5.06	479.7	512.1	81.2		32.1	LA	
nfd104a		5.06	483.73	516.13	81.8		32.3	LA	
umc1752	F728777	5.06	488.4	520.8	82.5		32.5	LA	
umc1680	W261378	5.06	493.5	525.9	83.2		32.5	LA	
rz567a(klc)	p-rz567	5.06	511.3	543.7	85.9		32.7	LA	
csu587b	A051897	5.06	511.5	543.9	85.9		32.7	LA	

csu26a(ant)	49852	5.06	520.1	552.5	87.2		32.9	LA	
rz273b(ant)	p-rz273	5.06	520.1	552.5	87.2		32.9	LA	
cdo507b(ant)	p-cdo507	5.06	520.1	552.5	87.2		32.9	LA	
gln4		5.06	528.7	561.1	88.4		32.9	LA	
umc1537	W424723	5.07	553.6	586	92.1		33.7	LA	
cdo516a	p-cdo516	5.07	570.54	602.94	94.6		33.9	LA	
lhcb4	18807	5.07	570.54	602.94	94.6		33.9	LA	
ppp1	14790	5.07	570.54	602.94	94.6		33.9	LA	
lhcb4		5.07	578.47	610.87	95.8		34.1	LA	
ppp1		5.07	578.47	610.87	95.8		34.1	LA	
nnr2		5.07	599.5	631.9	98.9		34.5	LA	
umc1072	I396479	5.07	600	632.4	99.0		34.5	LA	
umc1792	W498199	5.08	625.8	658.2	102.8		34.9	LA	
got2		5.08	648.23	680.63	106.1		35.3	LA	
rz446b	p-rz446	5.08	661.8	694.2	108.1		35.5	LA	
umc2308	PCO103478	5.08-5.09	672.6	705	109.7		35.7	LA	
umc1153	I612208	5.09	676.7	709.1	110.4		35.7	LA	
Chromosome 6									
fdx2		6.00	9.1		3.9		0.8	SA	H
umc1143	CL966_1	6.00	17.5		7.4		1	SA	H
csu710d(apx)	A143901	6.00	27.4		11.6		1.4	SA	H
csu178b	49882	6.00	27.4		11.6		1.4	SA	H
umc2310	PCO084337	6.00	27.6		11.7		1.6	SA	H
umc2309	PCO091833	6.00	27.8		11.8		1.6	SA	H
rz143a(gpc)	p-rz143	6.00	56.7		24.0		4.4	SA	H
nor		6.01	64.87		27.5		7	SA	H
gpc2		6.00-6.01	66.4		27.7		8.7	LA	H
umc1606	W216230	6.01	69.2		28.1		9.5	LA	H
umc2311	PCO121254	6.01	71.5		28.4		9.9	LA	H
umc2312	PCO119814	6.01	75.8		28.9		10.7	LA	H
cdo580b(ivd)	p-cdo580	6.01	77.24		29.1		11.7	LA	H
csu243	26940	6.01	82.66		29.7		11.9	LA	H
csu809	A661457	6.01	82.66		29.7		11.9	LA	H
rz390d(cyb5)	p-rz390	6.01	86.3		30.2		11.9	LA	H

csu94a	12715	6.01	90.79		30.7		12.3	LA	H
umc2313	PCO065587	6.01	91.9		30.9		12.3	LA	H
uck1	A054793	6.01	96		31.4		13.1	LA	
umc2074	PCO143674	6.01	98		31.6		13.1	LA	
umc1444	PCO119583	6.01	98.4		31.7		13.1	LA	
umc1133	CL50534_1	6.01	98.6		31.7		13.1	LA	
uaz232b(sci)		6.01	100.3		31.9		13.3	LA	
umc1498	W216194	6.01	104.41		32.4		13.3	LA	
enp1		6.02	107.37		32.8		13.7	LA	
cyc3		6.01	114.25		33.6		13.9	LA	
ucr1a(eif)		6.02	114.25		33.6		13.9	LA	
cyc3	W066215	6.01	116.57		33.9		14.7	LA	
y1		6.01	120.5		34.4		14.7	LA	
rz444e	p-rz444	6.02	123.7		34.8		14.9	LA	
csu183a(cdc48)	18843	6.02	125.53		35.0		15.1	LA	
mir2		6.02	126.46		35.1		15.1	LA	
mir1		6.02	127.1		35.2		15.1	LA	
rz242a	p-rz242	6.02	127.8		35.3		15.3	LA	
csu146a(cdc48)	12739	6.02	127.9		35.3		15.3	LA	
umc1376	6.02	6.01	127.9		35.3		15.3	LA	
saur1		6.02	129.06		35.4		15.3	LA	
umc1257	W056141	6.02	145.7		37.5		16.5	LA	
sbp3		6.02	153.7		38.4		16.9	LA	
csu923(sec61)	21637	6.02	158.7		39.1		17.1	LA	
umc2316	I622286	6.02-6.03	166.6		40.0		17.9	LA	
csu199a	A661436	6.03	172.35		40.7		18.1	LA	
std6b(dba)		6.03-6.04	181.9		41.9		18.5	LA	
umc1796	W562820	6.04	189.5		42.8		18.5	LA	
umc1105	PCO075489	6.04	199		44.0		18.9	LA	
umc1979	E050641	6.04	200.3		44.2		19.1	LA	
pl1		6.04	211.5		45.5		19.5	LA	
gta105		6.04	212.56		45.7		19.5	LA	
rz144b	p-rz144	6.04	235.33		48.4		21.5	LA	
umc2317	PCO113331	6.04-6.05	235.8		48.5		21.5	LA	
dzs23		6.04	235.98		48.5		21.5	LA	

umc1614	W154955	6.04	237.05		48.7		21.5	LA	
hex2		6.04	239.6		49.0		21.7	LA	
umc2318	CL11523_1	6.04-6.05	244.7		49.6		21.9	LA	
umc2319	PCO147469	6.04-6.05	244.9		49.6		21.9	LA	
umc1795	PCO107462	6.05	245.28		49.7		21.9	LA	
uaz280c(ppp)		6.05	251.7		50.5		21.9	LA	
csu835	21753	6.05	252.42		50.5		21.9	LA	
umc1751	W498335	6.05	254.48		50.8		22.1	LA	
csu481	A011843	6.05	261.1		51.6		22.1	LA	
zag1		6.05	269.8		52.7		22.5	LA	
umc1413	PCO073946	6.05	277.1		53.6		22.7	LA	
csu360(elf1A)	27555	6.05	281.45		54.1		22.9	LA	
umc1114	I692068	6.05	281.7		54.1		22.9	LA	
umc1314	I920654	6.05	284.3		54.5		22.9	LA	
csu116a(elf1)		6.05	291.88		55.4		23.3	LA	
ynh(me2)		6.05	293.69		55.6		23.3	LA	
umc1379	I737152	6.05	297.1		56.0		23.7	LA	
csu236	18815	6.05	301.81		56.6		24.1	LA	
csu60a	12690	6.05	301.81		56.6		24.1	LA	
umc1388	I901410	6.05	302		56.6		24.1	LA	
umc2040	E186653	6.05	310.66		57.7		24.3	LA	
dup400(pac)		6.05	313.32		58.0		24.3	LA	
umc2321	PCO144951	6.05	319		58.7		24.5	LA	
csu812	21733	6.05	322.69		59.2		24.5	LA	
umc2320	PCO075854	6.05	322.9		59.2		24.5	LA	
pdk1	49879	6.05	323.5		59.3		24.5	LA	
umc1462	G267667	6.06	325.09		59.5		24.7	LA	
pmg1		6.05	325.9		59.6		24.7	LA	
umc1474	PCO109066	6.06	342.13		61.5		25.1	LA	
rz444d	p-rz444	6.05	375.8		65.7		25.7	LA	
cdo89(aat)	p-cdo89	6.05-6.06	385.8		66.9		26.1	LA	
umc1463	I491642	6.06	393.9		67.9		26.1	LA	
umc1424	PCO101751	6.06	396.05		68.2		26.3	LA	
bcd738a(pgk)	p-bcd738	6.06	400.3		68.7		26.3	LA	
umc2322	PCO101751	6.06-6.07	404.4		69.2		26.3	LA	

csu841a	21758	6.06	433.01		72.7		27.1	LA	
umc2170	PCO133311	6.06	435.1		72.9		27.1	LA	
umc132a(chk)		6.07	444.2		74.1		27.3	LA	
umc1296	I947918	6.06-6.07	444.2		74.1		27.3	LA	
mlg3		6.07	452.7		75.1		27.3	LA	
umc1490	PCO074515	6.07	466.5		76.8		27.7	LA	
csu928	21642	6.07	482.24		78.7		27.7	LA	
umc2323	PCO064838	6.07	483.5		78.9		27.7	LA	
idh2		6.07	504.59		81.5		28.1	LA	
umc1350	PCO085152	6.07	504.8		81.5		28.1	LA	
mdh2		6.07	524.83		84.0		28.5	LA	
umc1621	W066892	6.07	526		84.1		28.5	LA	
agp2	18304	6.07	536.4		85.4		28.9	LA	
umc2324	PCO125989	6.08	544.5		86.4		28.9	LA	
cdo345c	p-cdo345	6.08	545.8		86.5		28.9	LA	
csu68a(mcf)	12696	6.08	548.55		86.9		29.1	LA	
cdo202a(mcf)	p-cdo202	6.08	548.7		86.9		29.1	LA	
uor1a(rpS12)		6.08	579.29		90.6		29.5	LA	
Chromosome 7									
umc7		7.00	-7.1	0	0.0		0	SA	
csu582	A051893	7.00	2.7	9.8	1.8		0.4	SA	
hsp3	PCO087444	7.00	5.5	12.6	2.3		0.6	SA	
umc1241	W017617	7.00	13.8	20.9	3.8		0.8	SA	
umc1642	PCO118362	7.00	27.2	34.3	6.3		0.8	SA	
umc1378	PCO118362	7.00	27.4	34.5	6.3		0.8	SA	
rs1		7.00	30.4	37.5	6.9		0.8	SA	
umc1694	PCO079082	7.00	45	52.1	9.6		1.2	SA	
umc1695	PCO079082	7.00	45.6	52.7	9.7		1.2	SA	
umc1426	I745774	7.00	47.8	54.9	10.1		1.2	SA	
asg8(myb)		7.01	61.3	68.4	12.6		1.4	SA	
php20581a(tb)		7.01	74.2	81.3	14.9		1.8	SA	
hda110		7.01	89.96	97.06	17.8		2.2	SA	
umc1159	I586601	7.01	92	99.1	18.2		2.2	SA	
uaz20b	18755	7.01	96.89	103.99	19.1		2.4	SA	

csu129	12726	7.01	109.54	116.64	21.4		3.4	SA	H
csu810b	21731	7.01	109.54	116.64	21.4		3.4	SA	H
o2		7.01	122.4	129.5	23.8		4	SA	H
umc1270	I964686	7.01	123.5	130.6	24.0		4.2	SA	H
his1a	12655	7.01	125.2	132.3	24.3		4.2	SA	H
umc2325	PCO118715	7.01	127.6	134.7	24.7		4.2	SA	H
asg34a(msd)		7.02	132	139.1	25.5		4.8	SA	H
umc1428	7.02	7.00	132	139.1	25.5		4.8	SA	H
ast(dcm1)		7.02	140.01	147.11	27.0		5.6	SA	H
in1		7.02	152.72	159.82	29.2		9	LA	H
umc1401	G265306	7.02	153	160.1	29.2		9	LA	H
umc1986	E050115	7.02	153.3	160.4	29.3		9	LA	H
kpp1		7.02	155.8	162.9	29.6		11.4	LA	H
umc1978	E050712	7.02	156.9	164	29.8		11.4	LA	H
psu2(bZip)		7.02	164.66	171.76	30.8		12.4	LA	H
umc1549	PCO083694	7.02	169.45	176.55	31.4		12.6	LA	H
crt2	49439	7.02	170.8	177.9	31.6		12.6	LA	H
cyp6	15323	7.02	179.9	187	32.8		13.2	LA	H
csu848b(vpp)	21765	7.02	179.91	187.01	32.8		13.2	LA	H
bcd1087b	p-bcd1087	7.02	179.91	187.01	32.8		13.2	LA	H
uaz352a	14770	7.02	179.91	187.01	32.8		13.2	LA	H
rz698e(ppy)	p-rz698	7.02	185	192.1	33.4		13.8	LA	H
rz698d(ppy)	p-rz698	7.02	185.6	192.7	33.5		13.8	LA	H
zpb36		7.02	227.28	234.38	39.0		16.2	LA	
umc1983	E050246	7.02	244.3	251.4	41.2		18	LA	
umc1138	I665696	7.02	247.7	254.8	41.6		18.2	LA	
umc1787	W282410	7.02	252.4	259.5	42.3		18.4	LA	
umc2092	PCO115023	7.02	252.9	260	42.3		18.4	LA	
umc1393	PCO125609	7.02	258.4	265.5	43.0		18.8	LA	
umc1585	PCO144738	7.02	261.02	268.12	43.4		18.8	LA	
cdo412b	p-cdo412	7.02	285.4	292.5	46.6		19.8	LA	
uaz205c(hsp70)	7.03	7.02	286.54	293.64	46.7		19.8	LA	
umc1713	W573395	7.03	298.4	305.5	48.3		20.4	LA	
umc1567	W061685	7.03	300	307.1	48.5		20.8	LA	
umc222(fgh)		7.03	300.92	308.02	48.6		20.8	LA	

ij1		7.03	300.92	308.02	48.6		20.8	LA	
umc1450	PCO135232	7.03	315.9	323	50.6		21.6	LA	
umc1987	E050079	7.03	318	325.1	50.8		21.6	LA	
umc1456	G266313	7.03	329.68	336.78	52.4		22	LA	
csu253	26942	7.03	336.64	343.74	53.3		22.4	LA	
umc1275	PCO096361	7.03	344.81	351.91	54.3		22.6	LA	
umc1660	PCO071075	7.03	351.4	358.5	55.2		23	LA	
umc1481	I740137	7.03	357.03	364.13	55.9		23.2	LA	
umc1408	F099417	7.03	365.4	372.5	57.0		23.4	LA	
oec6		7.03	371.61	378.71	57.9		23.4	LA	
rz404(ccp)	p-rz404	7.03	374	381.1	58.2		23.6	LA	
umc111b(psy)		7.03	379	386.1	58.8		23.6	LA	
umc1134	I666177	7.03	381.2	388.3	59.1		23.8	LA	
ndk1	18831	7.03	382.6	389.7	59.3		23.8	LA	
umc2329	PCO109231	7.03	384.4	391.5	59.5		23.8	LA	
umc1112	I711634	7.03	385.1	392.2	59.6		24	LA	
tif1	18792	7.03	399.3	406.4	61.5		24.4	LA	
ast(amyBS2)a		7.04	401.26	408.36	61.7		24.4	LA	
umc1301	W566366	7.03	405.5	412.6	62.3		24.4	LA	
csu21d(ago)	12663	7.04	407.74	414.84	62.6		24.4	LA	
umc2330	PCO102751	7.04	408.4	415.5	62.7		24.6	LA	
umc2331	PCO102751	7.04	408.4	415.5	62.7		24.6	LA	
umc1710	W563193	7.04	410.5	417.6	62.9		24.6	LA	
csu21d(ago)		7.04	423.77	430.87	64.7		24.8	LA	
umc1342	PCO152568	7.04	444.7	451.8	67.4		25.4	LA	
tua6	A051892	7.04	445.45	452.55	67.5		25.4	LA	
tua6		7.04	447.27	454.37	67.8		25.4	LA	
rip2		7.04	453.91	461.01	68.6		25.4	LA	
umc1543	PCO097719	7.04	457.45	464.55	69.1		25.6	LA	
isc(b32b)		7.04	459.33	466.43	69.3		25.6	LA	
bcd349	p-bcd349	7.04	464.5	471.6	70.0		25.6	LA	
umc1708	PCO078930	7.04	471.4	478.5	70.9		25.6	LA	
csu175d(eif5A)	18836	7.04	472.06	479.16	71.0		25.8	LA	
umc2332	PCO071510	7.04	472.6	479.7	71.1		25.8	LA	
csu8	12697	7.04	476	483.1	71.5		25.8	LA	

umc1768	W330690	7.04	481.1	488.2	72.2		25.8	LA	
umc1103	PCO061491	7.04	493.42	500.52	73.8		26	LA	
umc1295	I947923	7.04	494.8	501.9	74.0		26.2	LA	
csu906	21627	7.04	496.95	504.05	74.3		26.2	LA	
uaz119b(rpS6)		7.04	505.23	512.33	75.3		26.4	LA	
csu904	21625	7.04	511.5	518.6	76.2		26.6	LA	
umc1412	I770592	7.04	518.9	526	77.1		26.8	LA	
umc1125	PCO061754	7.04	522.84	529.94	77.6		27	LA	
csu920b	21634	7.05	546.36	553.46	80.7		27.6	LA	
csu27	12665	7.05	557.13	564.23	82.1		28	LA	
umc1671	PCO110974	7.05	559.72	566.82	82.5		28	LA	
cdo38b(ntp)		7.05	564.79	571.89	83.1		28	LA	
csu163a	12747	7.05	575.43	582.53	84.5		28.2	LA	
umc1154	I603762	7.05	580.18	587.28	85.1		28.2	LA	
cdo38b(ntp)	p-cdo38	7.05	585.85	592.95	85.9		28.2	LA	
cdo938d	p-cdo938	7.05	586.6	593.7	86.0		28.2	LA	
umc1406	PCO143008	7.05	598.9	606	87.6		28.4	LA	
umc1407	PCO143008	7.05	600.2	607.3	87.8		28.4	LA	
umc1760	W360581	7.05	607.6	614.7	88.7		28.4	LA	
bnl(tas1j)		7.06	640.08	647.18	93.0		28.8	LA	
Chromosome 8									
csu319	49898	8.01	5.9	49.1	10.5		1.6	SA	
rz382b	p-rz382	8.01	6.7	49.9	10.7		1.8	SA	
umc1139	I665279	8.01	26.8	70	15.0		2.2	SA	
rnp2	p-rz323U:	8.01	40.71	83.91	18.0		2.6	SA	
csu29c	12666	8.01	40.71	83.91	18.0		2.6	SA	
umc1414	I770529	8.01	48	91.2	19.6		3	SA	H
umc1327	E344659	8.01	55	98.2	21.1		3.2	SA	H
ncr(sod3b)		8.01	70.23	113.43	24.3		3.6	SA	H
umc1483	I737407	8.01	83.1	126.3	27.1		4.6	SA	H
bnl9.11a(lts)		8.02	106.4	149.6	31.2		10.3	LA	H
hon107b (H1)		8.02	110.33	153.53	31.6		10.3	LA	H
umc1817	W400071	8.02	115.3	158.5	32.2		10.3	LA	H
rz543b	p-rz543	8.02	115.32	158.52	32.2		10.3	LA	H

umc1304	I947678	8.02	128.6	171.8	33.7		10.9	LA	H
umc1974	E050897	8.02	153.3	196.5	36.4		13.1	LA	H
csu329	26952	8.02	175.9	219.1	39.0		15.5	LA	H
umc124a(chk)		8.03	176.6	219.8	39.0		15.5	LA	H
umc2353	PCO067598	8.03	203	246.2	42.0		17.3	LA	
rz244a(dia)	p-rz244	8.03	203.9	247.1	42.1		17.7	LA	
umc1157	PCO127606	8.03	206	249.2	42.3		17.9	LA	
cdo1160a(kri)	p-cdo1160	8.03	215.6	258.8	43.4		17.9	LA	
umc2354	PCO080860	8.03	216.2	259.4	43.5		17.9	LA	
asg24b(gts)		8.03	217.14	260.34	43.6		18.9	LA	
cdo202e(mcf)	p-cdo202	8.03	224.8	268	44.5		19.7	LA	
umc1415	I770497	8.03	228.6	271.8	44.9		19.9	LA	
umc1470	PCO144149	8.03	231.2	274.4	45.2		19.9	LA	
umc2355	PCO069392	8.03	232.9	276.1	45.4		20.3	LA	
umc1984	E050190	8.03	234.8	278	45.6		20.3	LA	
umc1236	W017823	8.03	239.96	283.16	46.2		20.9	LA	
umc2075	PCO135711	8.03	244.9	288.1	46.7		20.9	LA	
rps28	W424565	8.03	257.64	300.84	48.1		21.3	LA	
umc1289	W065251	8.03	264.36	307.56	48.9		21.5	LA	
umc1735	PCO125554	8.03	279.9	323.1	50.7		21.9	LA	
umc1735	W585263	8.03	279.9	323.1	50.7		21.9	LA	
umc1457	I734690	8.03	284.6	327.8	51.2		22.1	LA	
umc1457	G266312	8.03	284.6	327.8	51.2		22.1	LA	
umc1302	I947718	8.03	293.9	337.1	52.2		22.5	LA	
umc1460	I734528	8.04	304.2	347.4	53.4		22.7	LA	
umc1427	I745751	8.03	307.27	350.47	53.7		22.7	LA	
pdc1		8.04	315.2	358.4	54.6		23.1	LA	
caat1	15302	8.04	324.65	367.85	55.7		23.1	LA	
cdo1395e	p-cdo1395	8.04	324.65	367.85	55.7		23.1	LA	
rop7		8.05	328.53	371.73	56.1		23.3	LA	
umc1130	G266983	8.05	330.1	373.3	56.3		23.3	LA	
hox1	E511044	8.05	337.2	380.4	57.1		23.3	LA	
rip1	18690	8.04	343	386.2	57.7		23.3	LA	
umc1959	E186273	8.05	352.2	395.4	58.8		23.5	LA	
umc1562	G265650	8.05	353.3	396.5	58.9		23.5	LA	

umc1279	I948315	9.00	0	41.5	6.7		0.8	SA	
umc1957	E186437	9.00	0	41.5	6.7		0.8	SA	
rz144a	p-rz144	9.01	9.86	51.36	8.3		1	SA	
umc1370	I834608	9.01	17.7	59.2	9.5		1.2	SA	
koln2b(hox)		9.01	40.77	82.27	13.2		1.6	SA	
csu95a	12716	9.01	41.67	83.17	13.4		1.6	SA	
gta106b		9.01	55.51	97.01	15.6		2	SA	
mir3a(thp)		9.01	63.43	104.93	16.9		2	SA	
c1		9.01	64.7	106.2	17.1		2	SA	
umc2335	PCO119881	9.01-9.02	74.8	116.3	18.7		2.4	SA	
sh1	14661	9.01	80.3	121.8	19.6		2.6	SA	
umc1588	PCO106933	9.01	82.3	123.8	19.9		2.6	SA	
umc1967	E051900	9.01	84.3	125.8	20.2		2.6	SA	
umc1596	W054485	9.01	86.8	128.3	20.6		2.8	SA	
bz1 bronze1		9.02	90.1	131.6	21.2		2.8	SA	
umc1958	F729485	9.01-9.02	90.1	131.6	21.2		2.8	SA	
umc1170	PCO129627	9.02	101.1	142.6	22.9		3.4	SA	
chr113		9.02	103.86	145.36	23.4		3.4	SA	
csu471	A011874	9.02	105.8	147.3	23.7		3.4	SA	
csu486a	A011846	9.02	111.05	152.55	24.5		3.6	SA	
umc1430	I739900	9.02	115.37	156.87	25.2		3.8	SA	
prc1	14766	9.02	126.94	168.44	27.1		4	SA	
rz2a	p-rz2	9.02	126.94	168.44	27.1		4	SA	
umc1636	PCO108855	9.02	131.1	172.6	27.7		4.2	SA	
csu228(pfk)	18808	9.02	159.05	200.55	32.2		4.6	SA	
cdo475a	p-cdo475	9.02	159.05	200.55	32.2		4.6	SA	
csu94b	12715	9.02	159.05	200.55	32.2		4.6	SA	
umc1698	PCO108429	9.02	170.4	211.9	34.1		5.2	SA	
csu228(pfk)		9.02	173.33	214.83	34.5		5.2	SA	
cdo590(ppr)	p-cdo590	9.02-9.03	191.7	233.2	37.5		8.2	SA	H
wx1 waxy1		9.03	191.7	233.2	37.5		8.2	SA	H
umc1258	PCO107720	9.03	195.7	237.2	38.0		9.9	LA	H
hon104a (H1)		9.03	196.88	238.38	38.1		10.3	LA	H
umc1586	CL32837_1	9.03	199.7	241.2	38.4		10.7	LA	H
rf2		9.03	212.52	254.02	39.7		12.5	LA	

cdo17	p-cdo17	9.03	213.38	254.88	39.8		12.5	LA	
umc2338	PCO086047	9.05	219.4	260.9	40.5		13.1	LA	
rz273c(ant)	p-rz273	9.03	223.9	265.4	41.0		13.5	LA	
rz953	p-rz953	9.03	226.3	267.8	41.2		13.5	LA	
std6a(dba)		9.03	229.1	270.6	41.5		14.1	LA	
csu193	18850	9.03	229.1	270.6	41.5		14.1	LA	
csu623	A054803	9.03	230.6	272.1	41.7		14.1	LA	
umc1420	I746245	9.03	237.13	278.63	42.4		14.1	LA	
umc2340	PCO063131	9.03	238.4	279.9	42.5		14.1	LA	
umc1271	I948396	9.03	240.5	282	42.7		14.1	LA	
umc2087	W400149	9.03	252.3	293.8	44.0		14.9	LA	
umc1743	G268295	9.03	254	295.5	44.2		14.9	LA	
csu252b(cdc2)	18821	9.03-9.04	256.1	297.6	44.4		14.9	LA	
csu179b(hsp70)	9.04	9.03	256.1	297.6	44.4		14.9	LA	
csu181b	9.04	9.03	256.1	297.6	44.4		14.9	LA	
umc1267	I974888	9.03	257.6	299.1	44.6		15.1	LA	
rz682	p-rz682	9.03	258.2	299.7	44.6		15.1	LA	
csu147	12740	9.04	258.53	300.03	44.7		15.1	LA	
sbp4	J011617	9.04	266	307.5	45.5		15.1	LA	
csu183b(cdc48)	18843	9.04	272.78	314.28	46.2		15.9	LA	
csu263a	18825	9.04	272.78	314.28	46.2		15.9	LA	
umc1107	W216292	9.04	285.8	327.3	47.6		16.5	LA	
csu212a	A661437	9.04	302.87	344.37	49.4		17.1	LA	
csu43	12675	9.04	302.87	344.37	49.4		17.1	LA	
rz251b	p-rz251	9.04	302.87	344.37	49.4		17.1	LA	
wsu1(ptk)		9.04	302.89	344.39	49.4		17.1	LA	
umc1492	PCO139446	9.04	308	349.5	49.9		17.1	LA	
umc1120	I691610	9.04	309.9	351.4	50.1		17.1	LA	
sus1		9.04	311.5	353	50.3		17.3	LA	
umc1357	PCO092603	9.05	340.36	381.86	53.4		18.5	LA	
pge(phyB2)		9.05	350.07	391.57	54.4		19.1	LA	
csu392a	27575	9.05	358.2	399.7	55.3		19.3	LA	
umc1494	W231326	9.05	373.62	415.12	56.9		19.7	LA	
csu219(tgd)	18799	9.05	376.49	417.99	57.3		19.7	LA	
csu634	A054810	9.05	382.7	424.2	57.9		20.1	LA	

rz574b(cwp)	p-rz574	9.05	383.8	425.3	58.0		20.1	LA	
csu59a	12689	9.05	383.8	425.3	58.0		20.1	LA	
umc2342	PCO130752	9.05-9.06	384.9	426.4	58.2		20.1	LA	
umc2343	PCO092142	9.05-9.06	385.3	426.8	58.2		20.1	LA	
umc1732	W562720	9.05	404.95	446.45	60.3		20.7	LA	
umc1417	I770379	9.05	411.89	453.39	61.0		20.7	LA	
csu61a	12691	9.06	425.19	466.69	62.5		21.1	LA	
csu93a	12714	9.06	463.9	505.4	66.6		21.7	LA	
cdo1387a(emp70)	p-cdo1387	9.06	465.04	506.54	66.7		21.7	LA	
umc1366	W453170	9.06	489.9	531.4	69.4		22.3	LA	
umc2345	PCO112753	9.06	492.3	533.8	69.6		22.3	LA	
hb1	PCO112753	9.06	494.5	536	69.9		22.3	LA	
uom1(hb)		9.06	500.17	541.67	70.5		22.5	LA	
umc1310	W066887	9.06	517.6	559.1	72.3		22.5	LA	
umc1789	PCO141155	9.06	534.2	575.7	74.1		22.9	LA	
csu1118	49433	9.07	548.15	589.65	75.6		23.1	LA	
umc1714	W566364	9.07	567.3	608.8	77.6		23.5	LA	
umc2347	PCO103031	9.07-9.08	578.6	620.1	78.8		23.7	LA	
umc1137	I665873	9.08	603.5	645	81.5		24.1	LA	
umc1104	I714928	9.07	618.42	659.92	83.1		24.3	LA	
dmt103a		9.08	631.09	672.59	84.4		24.5	LA	
umc1982	E050312	9.08	633.2	674.7	84.7		24.5	LA	
umc1505	W191767	9.08	635.2	676.7	84.9		24.5	LA	
umc272(vfa)		9.07	636.68	678.18	85.0		24.5	LA	
csu54b	12684	9.08	649.7	691.2	86.4		24.7	LA	
umc1277	9.08	9.07	649.7	691.2	86.4		24.7	LA	
Chromosome 10									
csu306(fer)	A051894	10.00	8	32	5.1		0.6	SA	
umc1380	W438098	10.00	16.6	40.6	6.5		0.8	SA	
php20075a(gast)		10.01	34.8	58.8	9.5		1	SA	
umc1291	I964426	10.01	58.77	82.77	13.3		1.2	SA	
csu136(plt)		10.01	61.94	85.94	13.8		1.4	SA	
umc1318	PCO094104	10.01	62.37	86.37	13.9		1.4	SA	
umc2053	PCO073639	10.01	76.2	100.2	16.1		1.6	SA	

umc1319	W037000	10.01	82.45	106.45	17.1		1.8	SA	
npi285a(cac)		10.02	91	115	18.5		2	SA	
umc1152	I612250	10.02	91.4	115.4	18.6		2	SA	
gdcp1	W066370	10.02	97.9	121.9	19.6		2	SA	
umc1432	I738170	10.02	99.61	123.61	19.9		2	SA	
umc2034	E638841	10.02	120.1	144.1	23.2		2.8	SA	H
csu250a(aba)	18820	10.02	121.82	145.82	23.5		2.8	SA	H
umc1582	W055590	10.02	138.88	162.88	26.2		3.8	SA	H
umc1337	PCO078459	10.02	143.3	167.3	26.9		3.8	SA	H
rz900c(ahh)		10.02	146.8	170.8	27.5		5.6	SA	H
umc2114	PCO078459	10.02	148.9	172.9	27.7		8.7	LA	H
csu625	A054805	10.03	160.4	184.4	29.0		10.3	LA	H
umc18b(psaN)		10.03	164.1	188.1	29.5		10.9	LA	H
gcsH1	A072454	10.03	168.2	192.2	29.9		11.7	LA	H
bcd1072b(hsp70)	p-bcd1072	10.03	177.5	201.5	31.0		12.3	LA	H
umc1312	PCO151485	10.03	180.24	204.24	31.3		12.7	LA	H
umc1785	W400188	10.03	180.24	204.24	31.3		12.7	LA	H
umc1962	F729523	10.03	180.7	204.7	31.4		12.7	LA	H
umc1381	PCO066290	10.03	187	211	32.1		13.3	LA	H
umc2067	PCO061908	10.03	194.5	218.5	33.0		13.5	LA	H
umc2016	PCO061908	10.03	195.4	219.4	33.1		13.7	LA	H
bcd147(gbp)	p-bcd147L:	10.03	196.4	220.4	33.2		13.7	LA	H
umc1345	PCO124949	10.03	199.5	223.5	33.5		14.3	LA	H
rps3	23346	10.03	208.5	232.5	34.6		15.7	LA	H
umc1239	W065775	10.03	213.3	237.3	35.1		16.3	LA	H
umc1739	W433480	10.03	228	252	36.8		17.1	LA	
fgp1	21675	10.03	234.3	258.3	37.5		17.3	LA	
umc2348	PCO084628	10.03-10.04	244.6	268.6	38.7		17.7	LA	
umc1995	PCO084628	10.04	245.9	269.9	38.8		17.7	LA	
nac1	14760	10.04	246.48	270.48	38.9		17.7	LA	
umc1246	PCO107455	10.04	248.2	272.2	39.1		17.9	LA	
csu276	49889	10.04	248.98	272.98	39.2		17.9	LA	
csu46a	12676	10.04	253.16	277.16	39.7		17.9	LA	
rz69	p-rz69	10.04	253.4	277.4	39.7		17.9	LA	
umc1589	W037188	10.04	259.7	283.7	40.4		18.1	LA	

csu893(isp)	21617	10.04	260.5	284.5	40.5		18.1	LA	
mgs1		10.04	260.5	284.5	40.5		18.1	LA	
csu333	49864	10.04	260.5	284.5	40.5		18.1	LA	
incw3		10.04	272.2	296.2	41.9		18.3	LA	
umc1453	I734806	10.04	274.4	298.4	42.1		18.3	LA	
umc2350	PCO111665	10.04	283.5	307.5	43.2		18.7	LA	
umc1330	PCO102879	10.04	287.9	311.9	43.7		18.7	LA	
csu981(eif5A)	21687	10.04	290.5	314.5	44.0		18.7	LA	
gpa2	A054791	10.04	290.5	314.5	44.0		18.7	LA	
csu86	12708	10.04	290.5	314.5	44.0		18.7	LA	
umc1280	W498343	10.04	292.23	316.23	44.2		18.7	LA	
umc1115	I737940	10.04	295.9	319.9	44.6		18.7	LA	
umc1272	I948375	10.04	299.4	323.4	45.0		18.7	LA	
std4(dba)		10.04	304.07	328.07	45.5		18.9	LA	
rz740(sam)	p-rz740	10.04	307.44	331.44	45.9		18.9	LA	
sam1		10.04-10.05	309	333	46.1		18.9	LA	
umc1507		10.04	309	333	46.1		18.9	LA	
umc1677	PCO155066	10.05	311.4	335.4	46.4		18.9	LA	
ufg3b(ivr)		10.05	321.95	345.95	47.6		19.3	LA	
csu745a(rpPo)	A143921	10.05	343.4	367.4	50.0		19.5	LA	
umc1506	W244931	10.05	344.8	368.8	50.2		19.5	LA	
por2 porin2		10.06	356.91	380.91	51.6		19.5	LA	
r1 colored1		10.06	373.11	397.11	53.4		19.7	LA	
ucsd(lfyA)		10.06	373.4	397.4	53.5		19.9	LA	
cdo1417b(ptk)	p-cdo1417	10.06	387.56	411.56	55.1		20.1	LA	
csu615b	A054796	10.06	387.56	411.56	55.1		20.1	LA	
tip5		10.06	392.5	416.5	55.6		20.1	LA	
umc1993	W927466	10.06	410.6	434.6	57.7		20.3	LA	
dmt102a		10.06	414.11	438.11	58.1		20.5	LA	
cdo244a(crp)		10.06-10.07	437.6	461.6	60.8		20.7	LA	
bni7.49a(hmd)		10.07	437.6	461.6	60.8		20.7	LA	
umc1196	G267682	10.07	444.8	468.8	61.6		20.9	LA	
rz590b	p-rz590	10.07	453.14	477.14	62.6		21.1	LA	
umc1176	W042418	10.07	468.4	492.4	64.3		21.1	LA	
umc1640	W433461	10.07	483.6	507.6	66.1		21.3	LA	

csu844	21761	10.07	495.06	519.06	67.4		21.5	LA	
crr2		10.07	505.5	529.5	68.6		21.7	LA	
umc2021	E345449	10.07	505.5	529.5	68.6		21.7	LA	
dba3		10.07	533.2	557.2	71.8		22.1	LA	
csu48	64437	10.07	533.2	557.2	71.8		22.1	LA	