

Supplemental Table S2 Genetic map distances in various mutant strains

GENOTYPE (STRAIN)	INTERVAL (CHROMOSOME)	PD	TT	NPD	TOTAL	cM (± SE)	%WT	cM by chrm	%WT by chrm	NPDobs/NPDexp (± SE)
<i>zip1</i> [N3A,R6A,D7A] (K1281)	<i>HIS4-CEN3</i> (III)	304	219	3	526	22.5 (1.4)	84	83.1 (III)	78	0.18 (0.11)
	<i>CEN3-MAT</i> (III)	367	156	1	524	15.5 (1.1)	77			0.14 (0.14)
	<i>MAT-RAD18</i> (III)	264	255	5	524	27.2 (1.6)	75			0.20 (0.09)
	<i>RAD18-HMR</i> (III)	354	171	3	528	17.9 (1.4)	78			0.33 (0.19)
	<i>SPO11-SPO13</i> (VIII)	289	223	5	517	24.5 (1.6)	63	51.8 (VIII)	68	0.28 (0.13)
	<i>SPO13-THR1</i> (VIII)	462	52	0	514	5.1 (0.7)	67			n.d.
	<i>THR1-LYS2</i> (VIII)	292	224	1	517	22.2 (1.2)	75			0.06 (0.06)
<i>zip1</i> [F4A,F5A] (K1309)	<i>HIS4-CEN3</i> (III)	297	114	3	414	15.9 (1.6)	60	72.5 (III)	68	0.61 (0.36)
	<i>CEN3-MAT</i> (III)	300	113	2	415	15.1 (1.5)	75			0.42 (0.30)
	<i>MAT-RAD18</i> (III)	259	148	6	413	22.3 (2.0)	61			0.67 (0.28)
	<i>RAD18-HMR</i> (III)	272	142	3	417	19.2 (1.7)	84			0.37 (0.22)
	<i>SPO11-SPO13</i> (VIII)	326	86	1	413	11.1 (1.2)	28	29.2 (VIII)	38	0.38 (0.38)
	<i>SPO13-THR1</i> (VIII)	373	34	0	407	4.2 (0.7)	55			n.d.
	<i>THR1-LYS2</i> (VIII)	303	101	2	406	13.9 (1.5)	47			0.52 (0.37)
<i>zip1</i> [F4A,F5A] <i>msh4Δ</i> (K1321)	<i>HIS4-CEN3</i> (III)	99	26	2	127	15.0 (3.7)	56	69.0 (III)	65	n.d.
	<i>CEN3-MAT</i> (III)	99	30	0	129	11.6 (1.9)	58			n.d.
	<i>MAT-RAD18</i> (III)	82	45	1	128	19.9 (3.0)	55			n.d.
	<i>RAD18-HMR</i> (III)	86	40	3	129	22.5 (4.3)	98			n.d.
	<i>SPO11-SPO13</i> (VIII)	86	42	1	129	18.6 (3.0)	47	39.9 (VIII)	52	n.d.
	<i>SPO13-THR1</i> (VIII)	115	9	0	124	3.6 (1.2)	47			n.d.
	<i>THR1-LYS2</i> (VIII)	90	32	2	124	17.7 (3.8)	60			n.d.
<i>zip1</i> [I18A, F19A] (K1282)	<i>HIS4-CEN3</i> (III)	154	52	0	206	12.6 (1.5)	47	79.8 (III)	75	n.d.
	<i>CEN3-MAT</i> (III)	151	61	0	212	14.4 (1.6)	72			n.d.
	<i>MAT-RAD18</i> (III)	119	83	8	210	31.2 (4.1)	86			1.37 (0.52)
	<i>RAD18-HMR</i> (III)	137	75	3	215	21.6 (2.8)	94			0.68 (0.40)
	<i>SPO11-SPO13</i> (VIII)	147	60	1	208	15.9 (2.1)	41	49.1 (VIII)	64	0.37 (0.37)
	<i>SPO13-THR1</i> (VIII)	171	29	1	201	8.7 (1.9)	114			1.72 (1.74)
	<i>THR1-LYS2</i> (VIII)	107	92	1	200	24.5 (2.2)	83			0.12 (0.12)
<i>zip1</i> [I18A, F19A] <i>msh4Δ</i> (K1328)	<i>HIS4-CEN3</i> (III)	117	19	2	138	11.2 (3.3)	38	64.5 (III)	61	n.d.
	<i>CEN3-MAT</i> (III)	111	29	0	140	10.4 (1.7)	52			n.d.
	<i>MAT-RAD18</i> (III)	80	52	5	137	29.9 (4.9)	82			n.d.
	<i>RAD18-HMR</i> (III)	102	36	0	138	13.0 (1.9)	57			n.d.
	<i>SPO11-SPO13</i> (VIII)	92	41	1	134	17.5 (2.9)	45	40.7 (VIII)	53	n.d.
	<i>SPO13-THR1</i> (VIII)	121	7	0	128	2.7 (1.0)	36			n.d.
	<i>THR1-LYS2</i> (VIII)	91	35	3	129	20.5 (4.3)	69			n.d.
<i>zip3Δ</i> (K926)	<i>HIS4-CEN3</i> (III)	322	161	10	493	22.4 (2.1)	84	86.5 (III)	82	1.16 (0.38)
	<i>CEN3-MAT</i> (III)	327	167	5	499	19.7 (1.6)	98			0.54 (0.25)
	<i>MAT-RAD18</i> (III)	318	153	9	480	21.6 (2.1)	60			1.13 (0.39)
	<i>RAD18-HMR</i> (III)	306	174	8	488	22.8 (2.0)	100			0.76 (0.28)
	<i>SPO11-SPO13</i> (VIII)	335	119	7	461	17.5 (1.9)	45	35.7 (VIII)	47	1.49 (0.58)
	<i>SPO13-THR1</i> (VIII)	427	44	1	472	5.3 (0.9)	70			1.83 (1.83)
	<i>THR1-LYS2</i> (VIII)	369	97	4	470	12.9 (1.5)	44			1.37 (0.69)
<i>zip3Δ msh4Δ</i> (AM3658/AM3659)	<i>HIS4-CEN3</i> (III)	351	195	10	556	22.9 (1.9)	86	93.1 (III)	88	0.87 (0.28)
	<i>CEN3-MAT</i> (III)	367	194	8	569	21.3 (1.7)	106			0.73 (0.26)
	<i>MAT-RAD18</i> (III)	344	177	12	533	23.4 (2.1)	64			1.24 (0.37)
	<i>RAD18-HMR</i> (III)	330	210	12	552	25.5 (2.0)	111			0.86 (0.26)
	<i>SPO11-SPO13</i> (VIII)	361	179	8	548	20.7 (1.8)	53	42.4 (VIII)	56	0.83 (0.30)
	<i>SPO13-THR1</i> (VIII)	464	64	1	529	6.6 (0.9)	87			0.95 (0.95)
	<i>THR1-LYS2</i> (VIII)	392	129	5	526	15.1 (1.5)	51			1.04 (0.47)
<i>zip3Δ zip1</i> [Δ2-9] (MP52)	<i>HIS4-CEN3</i> (III)	354	155	5	514	18.0 (1.6)	67	80.6 (III)	76	0.78 (0.24)
	<i>CEN3-MAT</i> (III)	355	171	7	533	20.0 (1.7)	100			0.78 (0.30)
	<i>MAT-RAD18</i> (III)	345	159	6	510	19.1 (1.7)	53			0.75 (0.31)
	<i>RAD18-HMR</i> (III)	317	187	9	513	23.5 (1.9)	103			0.77 (0.27)
	<i>SPO11-SPO13</i> (VIII)	343	150	6	499	18.6 (1.7)	47	39.1 (VIII)	51	0.83 (0.35)
	<i>SPO13-THR1</i> (VIII)	438	39	2	479	5.3 (1.1)	70			4.76 (3.34)
	<i>THR1-LYS2</i> (VIII)	354	122	4	480	15.2 (1.6)	52			0.85 (0.43)