Table S1. Metal Evolved Yeast Lines

Metal	96 deep-well (mM)†	Bioscreen (mM)¥	No. lines	No. Petites
$CdSO_4$	0.035	0.0298	34	0
$CoSO_4$	1.875	1.5938	16	16
$CuSO_4$	7.9	6.715	15	2
$MnCl_2$	3.5	2.975	28	22
$NiSO_4$	2.2	1.87	17	2
$ZnSO_4$	4.4	3.74	42	2

† Used in 1ml volume evolution experiment ¥ Used in 120 ul volume reciprocal transplant test

Table S2. Linear Model of Environment vs. Genotype Quality

–	**All tests**[†]	**Not Evo. Env.**[¥]
Residual standard error (4 df)	0.03388	0.01527
Multiple R-squared	0.2126	0.8492
Adjusted R-squared	0.0157	0.8115
F-statistic	1.08	22.53
p-value	0.3574	0.008992**

[†] Including tested in evolution environment [¥] Excluding tested in evolution environment

Table S 3. Genome statistics and mutation types per evolved line and ancestor

Line	Lines in fastq	Reads	Coverage	CUP1 rel. to w303	no. SNPs	chr double	Petite
CdBM23	10834840	2708710	32.52	0.86	3		
CdBM25	11139704	2784926	33.43	0.69	2		
CdBM26	11734984	2933746	35.22	0.80	3		
CdBM29	8313208	2078302	24.95	1.01	6		
CdBM30	12689672	3172418	38.08	0.85	9		
CdBM32	12159512	3039878	36.49	0.77	8		
CdBM36	13208960	3302240	39.64	0.76	0		
CdBM37	10775768	2693942	32.34	0.65	3	II, III, IV	
CdBM39	11455496	2863874	34.38	0.88	1	II, IV	
CdBM42	11016864	2754216	33.06	0.75	4		
CdBM43	11838792	2959698	35.53	0.85	2		
CdBM44	9511256	2377814	28.54	0.62	2	II	
CdBM45	10422344	2605586	31.28	1.07	1	I, VI	
CdBM46	9792200	2448050	29.39	1.05	1		
CdBM47	11526992	2881748	34.59	0.85	2		
CdBM48	8619576	2154894	25.87	0.87	1		
CoBM12	7116616	1779154	21.36	0.68	5		petite
CoBM14	6759888	1689972	20.29	0.72	6		petite
CoBM15	9426920	2356730	28.29	0.96	5		petite
CoBM16	7527136	1881784	22.59	0.68	5		petite
CoBM17	8585520	2146380	25.77	0.82	6		petite
CoBM18	10699592	2674898	32.11	0.63	7		petite
CoBM1	10258824	2564706	30.79	0.55	4		petite
CoBM20	10039256	2509814	30.13	0.76	7		petite
CoBM21	12334432	3083608	37.02	0.58	4		petite
CoBM2	9434200	2358550	28.31	0.76	6	XIII	petite
CoBM3	7890072	1972518	23.68	0.86	7		petite
CoBM4	7229824	1807456	21.70	0.65	2		petite
CoBM5	8568744	2142186	25.72	0.88	5		petite
CoBM6	12113072	3028268	36.35	0.76	8		petite
CoBM7	13505784	3376446	40.53	0.83	5		petite
CoBM8	16516056	4129014	49.57	0.72	5		petite
CuBM10	13461256	3365314	40.40	0.60	1		
CuBM11	14281928	3570482	42.86	1.52	1		
CuBM12	11820328	2955082	35.47	0.45	1		
CuBM13	7608304	1902076	22.83	0.37	1		
CuBM14	7247856	1811964	21.75	1.80	4		
CuBM15	8389024	2097256	25.18	1.90	1		
CuBM16	11075904	2768976	33.24	0.51	0		
CuBM17	10676992	2669248	32.04	1.44	1		
CuBM18	11463720	2865930	34.40	2.42	4		
CuBM3	10463688	2615922	31.40	0.69	1		petite
CuBM4	10380144	2595036	31.15	0.70	2		
CuBM6	9421760	2355440	28.28	0.66	2		
CuBM7	9610264	2402566	28.84	2.14	2		
CuBM8	9506912	2376728	28.53	0.79	0		
CuBM9	8422544	2105636	25.28	1.97	3		

MnBM12	10141752	2535438	30.44	0.84	5		
MnBM13	11270944	2817736	33.82	0.89	5		petite
MnBM14	10856088	2714022	32.58	0.80	32	XI	petite
MnBM15	10743112	2685778	32.24	0.74	2		
MnBM16	5492576	1373144	16.48	1.00	5		
MnBM17	8648256	2162064	25.95	1.19	4		petite
MnBM18	8397208	2099302	25.20	0.65	3		
MnBM20	13807256	3451814	41.44	0.93	2		petite
MnBM21	11380224	2845056	34.15	0.59	3		
MnBM23	10488584	2622146	31.48	0.71	6		petite
MnBM24	10282264	2570566	30.86	0.71	4		
MnBM25	10836576	2709144	32.52	0.71	2		petite
MnBM27	9635120	2408780	28.92	1.09	2		petite
MnBM28	8549240	2137310	25.66	0.66	1		petite
MnBM29	10157512	2539378	30.48	0.73	3		
MnBM31	9659440	2414860	28.99	0.80	6		
MnBM32	11843352	2960838	35.54	0.85	12		petite
MnBM34	13372768	3343192	40.13	0.78	3		petite
MnBM38	14654288	3663572	43.98	0.65	4		petite
MnBM39	13817880	3454470	41.47	0.85	4	I, II, V	petite
MnBM42	15738936	3934734	47.23	0.84	93		petite
MnBM44	13021040	3255260	39.08	1.07	0		petite
NiBM11	13463760	3365940	40.41	0.82	2		
NiBM12	12215896	3053974	36.66	0.55	2	XIII, XIV	
NiBM14	13271632	3317908	39.83	0.72	1	XIII, XIV	
NiBM16	13166824	3291706	39.51	0.89	0	XIII, XIV	
NiBM17	12958096	3239524	38.89	0.75	1		
NiBM21	12627168	3156792	37.89	0.67	2		
NiBM22	13221464	3305366	39.68	0.83	0		
NiBM24	14953512	3738378	44.88	0.74	3		petite
NiBM25	15766952	3941738	47.32	0.66	0		
NiBM27	12275216	3068804	36.84	0.90	1		
NiBM28	15576504	3894126	46.75	0.84	2		
NiBM29	11930048	2982512	35.80	0.61	0	XIII, XIV	
NiBM30	14892048	3723012	44.69	0.87	2		
NiBM4	13621872	3405468	40.88	0.69	4		petite
NiBM6	13100912	3275228	39.32	0.97	3	I, VII, XIV	
NiBM8	14417552	3604388	43.27	0.82	0	XIII	
NiBM9	12448192	3112048	37.36	0.79	1		
W303	11457888	2864472	34.39	1.00	ancestor		
ZnBM11	13360384	3340096	40.10	0.65	2		
ZnBM12	13911672	3477918	41.75	0.72	1		
ZnBM15	10983456	2745864	32.96	0.81	1		
ZnBM16	12281648	3070412	36.86	0.76	3		
ZnBM17	7949784	1987446	23.86	1.19	2		
ZnBM19	11915032	2978758	35.76	0.95	1	I	
ZnBM22	11418288	2854572	34.27	0.87	1		
ZnBM23	12105288	3026322	36.33	0.71	2	II	
ZnBM25	10885888	2721472	32.67	0.75	0		
ZnBM28	13429792	3357448	40.30	0.72	1		

ZnBM29	15169376	3792344	45.52	0.87	1	XIII	
ZnBM31	14476768	3619192	43.45	0.75	1		
ZnBM34	13360160	3340040	40.09	0.63	0		
ZnBM37	13027176	3256794	39.10	0.56	1		
ZnBM38	12474680	3118670	37.44	0.81	2	II	
ZnBM39	13466792	3366698	40.41	0.92	1	II	
ZnBM41	13481640	3370410	40.46	0.93	2	XIII	
ZnBM42	9237704	2309426	27.72	1.06	1		
ZnBM43	13373064	3343266	40.13	0.96	3	XIII	
ZnBM44	11301576	2825394	33.92	0.67	2	I	
ZnBM45	12638760	3159690	37.93	0.77	3		
ZnBM46	9167944	2291986	27.51	0.54	2		
ZnBM47	9207088	2301772	27.63	0.81	1	X, XIII	

Table S 4. SNP mutations gene annotation and variant type

Line	Gene	Gene_Code	chrom.pos	SNP	Amino acid change
CdBM23	KTR3	YBR205W	chrII.634214	c.593G A	p.Trp198*
CdBM23	CYK3	YDL117W	chrIV.249010	c.437delA	p.Asn146fs
CdBM23	YRB2	YIL063C	chrIX.243630	c.114delA	p.Asp39fs
CdBM25	SFP1	YLR403W	chrXII.927603	c.2038delC	p.His680fs
CdBM25	FKS3	YMR306W	chrXIII.882649	c.1491G A	p.Leu497Leu
CdBM26	MET30	YIL046W	chrIX.269753	c.1103A C	p.Asn368Thr
CdBM26	HMF1	YER057C	chrV.270774	c.353A G	p.Asp118Gly
CdBM26	MYO2	YOR326W	chrXV.929249	c.3529G T	p.Gly1177Cys
CdBM29	RTC2	YBR147W	chrII.537159	c.594delA	p.Lys198fs
CdBM29	PBP2	YBR233W	chrII.683908	c.481G A	p.Gly161Arg
CdBM29	KIN1	YDR122W	chrIV.694840	c.157_159delCAG	p.Gln53del
CdBM29	SPO11	YHL022C	chrVIII.63926	c.231delA	p.Gly78fs
CdBM29	SFP1	YLR403W	chrXII.926537	c.970C T	p.Gln324*
CdBM29	PHM7	YOL084W	chrXV.162510	c.155A G	p.Glu52Gly
CdBM30	KIN82	YCR091W	chrIII.275091	c.694delC	p.Leu232fs
CdBM30	DNF1	YER166W	chrV.516594	c.3860dupT	p.Tyr1289fs
CdBM30	HUL5	YGL141W	chrVII.240739	c.2387G A	p.Arg796Lys
CdBM30	SPO77	YLR341W	chrXII.807779	c.404delA	p.Asn135fs
CdBM30	SFP1	YLR403W	chrXII.927434	c.1867C T	p.His623Tyr
CdBM30	CSM3	YMR048W	chrXIII.367082	c.102T C	p.Asp34Asp
CdBM30	ERB1	YMR049C	chrXIII.369659	c.859C A	p.Arg287Ser
CdBM30	ABP140	YOR239W	chrXV.785519	c.674delA	p.Asn225fs
CdBM30	DBF20	YPR111W	chrXVI.747862	c.567delA	p.Asp190fs
CdBM32	HO	YDL227C	chrIV.46589	c.1442delA	p.Lys481fs
CdBM32	UBC1	YDR177W	chrIV.817301	c.424G A	p.Ala142Thr
CdBM32	YAP6	YDR259C	chrIV.974680	c.1102delA	p.Ile368fs
CdBM32	YOR1	YGR281W	chrVII.1053612	c.789C T	p.Asn263Asn
CdBM32	EFR3	YMR212C	chrXIII.692578	c.465delT	p.Phe155fs
CdBM32	RRP5	YMR229C	chrXIII.732526	c.-1403A C	NA
CdBM32	FET4	YMR319C	chrXIII.912911	c.1628G C	p.Arg543Pro
CdBM32	RPT5	YOR117W	chrXV.546205	c.1177G A	p.Ala393Thr
CdBM37	SAP4	YGL229C	chrVII.65388	c.1571delA	p.Asn524fs
CdBM37	UBR2	YLR024C	chrXII.191296	c.1985delT	p.Phe662fs
CdBM37	YML018C	YML018C	chrXIII.236652	c.-701delA	NA
CdBM39	PPQ1	YPL179W	chrXVI.208936	c.788delA	p.Lys263fs
CdBM42	POL3	YDL102W	chrIV.277623	c.752A G	p.Asn251Ser
CdBM42	DDR48	YMR173W	chrXIII.609388	c.700A G	p.Asn234Asp
CdBM42	FET4	YMR319C	chrXIII.914235	c.303delT	p.Phe101fs
CdBM42	SMF1	YOL122C	chrXV.91346	c.74A G	p.Glu25Gly
CdBM43	KTR3	YBR205W	chrII.634214	c.593G A	p.Trp198*
CdBM43	YRB2	YIL063C	chrIX.243630	c.114delA	p.Asp39fs
CdBM44	BNA6	YFR047C	chrVI.245165	c.1delA	p.Met1fs
CdBM44	INP2	YMR163C	chrXIII.585173	c.1215delA	p.Lys405fs
CdBM45	HUL5	YGL141W	chrVII.240693	c.2341G A	p.Glu781Lys
CdBM46	HUL5	YGL141W	chrVII.240693	c.2341G A	p.Glu781Lys
CdBM47	HUL5	YGL141W	chrVII.240693	c.2341G A	p.Glu781Lys
CdBM47	MLS1	YNL117W	chrXIV.407160	c.803A G	p.Gln268Arg

CdBM48	SPS100	YHR139C	chrVIII.378250	c.950T C	p.Leu317Ser
CoBM1	PDX1	YGR193C	chrVII.885051	c.691C G	p.Leu231Val
CoBM1	PHO84	YML123C	chrXIII.25178	c.623G A	p.Trp208*
CoBM1	TAF8	YML114C	chrXIII.42805	c.771G T	p.Ala257Ala
CoBM1	HHF2	YNL030W	chrXIV.577027	c.302_*4del	p.Phe101fs
CoBM12	NUG1	YER006W	chrV.164204	c.1482A T	p.Lys494Asn
CoBM12	KSP1	YHR082C	chrVIII.268511	c.3038G C	p.Gly1013Ala
CoBM12	VPS63	YLR261C	chrXII.668352	c.212G C	p.Ser71Thr
CoBM12	MAM3	YOL060C	chrXV.215342	c.796T C	p.Phe266Leu
CoBM12	MDL2	YPL270W	chrXVI.30675	c.194G T	p.Arg65Ile
CoBM14	PKC1	YBL105C	chrII.17571	c.126G A	p.Thr42Thr
CoBM14	CHC1	YGL206C	chrVII.105696	c.1809C A	p.Asp603Glu
CoBM14	OCA5	YHL029C	chrVIII.47582	c.387C G	p.Tyr129*
CoBM14	GRR1	YJR090C	chrX.591908	c.2420C T	p.Ser807Phe
CoBM14	CYT2	YKL087C	chrXI.277675	c.189C T	p.Ser63Ser
CoBM14	IDH1	YNL037C	chrXIV.558815	c.188T A	p.Ile63Lys
CoBM15	TOM1	YDR457W	chrIV.1375220	c.5433delT	p.Asp1812fs
CoBM15	SSQ1	YLR369W	chrXII.860006	c.455C T	p.Pro152Leu
CoBM15	IOC4	YMR044W	chrXIII.356311	c.928C A	p.Pro310Thr
CoBM15	TPS3	YMR261C	chrXIII.792034	c.1336G C	p.Asp446His
CoBM15	FSF1	YOR271C	chrXV.831557	c.486T C	p.Gly162Gly
CoBM16	MAS2	YHR024C	chrVIII.158818	c.375T A	p.Pro125Pro
CoBM16	TRL 1	YJL087C	chrX.270084	c.2402C A	p.Ser801Tyr
CoBM16	ALY2	YJL084C	chrX.277922	c.80delT	p.Leu27fs
CoBM16	SIW14	YNL032W	chrXIV.575167	c.662C A	p.Thr221Lys
CoBM16	RHO1	YPR165W	chrXVI.875682	c.315T C	p.Ile105Ile
CoBM17	GPB2	YAL056W	chrI.40593	c.1335A C	p.Leu445Phe
CoBM17	RAD16	YBR114W	chrII.467332	c.85A T	p.Thr29Ser
CoBM17	UME6	YDR207C	chrIV.867413	c.110A T	p.Lys37Ile
CoBM17	AFT1	YGL071W	chrVII.372520	c.509C T	p.Ser170Phe
CoBM17	GCD2	YGR083C	chrVII.644958	c.1858A T	p.Thr620Ser
CoBM17	SIW14	YNL032W	chrXIV.575008	c.503T A	p.Leu168*
CoBM18	SYG1	YIL047C	chrIX.266383	c.1441G A	p.Gly481Ser
CoBM18	SET2	YJL168C	chrX.103711	c.718C T	p.Arg240Cys
CoBM18	MCK1	YNL307C	chrXIV.57472	c.102G A	p.Leu34Leu
CoBM18	SIW14	YNL032W	chrXIV.575229	c.724G A	p.Glu242Lys
CoBM18	MAM3	YOL060C	chrXV.215920	c.218T G	p.Leu73Arg
CoBM18	RPS15	YOL040C	chrXV.253378	c.200C G	p.Ala67Gly
CoBM18	ASN1	YPR145W	chrXVI.822877	c.258A C	p.Glu86Asp
CoBM2	VTC4	YJL012C	chrX.412379	c.1021G T	p.Glu341*
CoBM2	HSL1	YKL101W	chrXI.249736	c.817A C	p.Thr273Pro
CoBM2	APC2	YLR127C	chrXII.397423	c.897G A	p.Lys299Lys
CoBM2	RCE1	YMR274C	chrXIII.814661	c.651C A	p.Cys217*
CoBM2	BNI1	YNL271C	chrXIV.132973	c.2411C G	p.Thr804Ser
CoBM2	SIW14	YNL032W	chrXIV.574713	c.208C T	p.Arg70*
CoBM20	SPT2	YER161C	chrV.500260	c.89A G	p.Asp30Gly
CoBM20	NAB2	YGL122C	chrVII.279126	c.1398T C	p.Asn466Asn
CoBM20	MED6	YHR058C	chrVIII.219699	c.186G A	p.Val62Val
CoBM20	SPO20	YMR017W	chrXIII.308479	c.991C T	p.Gln331*
CoBM20	SIW14	YNL032W	chrXIV.574928	c.428dupT	p.Leu143fs

CoBM20	SIW14	YNL032W	chrXIV.574936	c.431A C	p.His144Pro
CoBM20	TGL5	YOR081C	chrXV.478283	c.906C T	p.Ile302Ile
CoBM21	OCA4	YCR095C	chrIII.288718	c.541G A	p.Glu181Lys
CoBM21	PMA1	YGL008C	chrVII.481133	c.1534G A	p.Ala512Thr
CoBM21	STP3	YLR375W	chrXII.871981	c.285T A	p.Ala95Ala
CoBM21	KAR3	YPR141C	chrXVI.815942	c.1982A T	p.His661Leu
CoBM3	CLN3	YAL040C	chrI.66785	c.736T G	p.Leu246Val
CoBM3	YDR269C	YDR269C	chrIV.1005804	c.185C A	p.Thr62Asn
CoBM3	FYV10	YIL097W	chrIX.181770	c.1344A C	p.Leu448Phe
CoBM3	VTC4	YJL012C	chrX.411818	c.1581delC	p.Gly528fs
CoBM3	VTC4	YJL012C	chrX.411821	c.1579C G	p.Pro527Ala
CoBM3	TRK2	YKR050W	chrXI.529178	c.1364A C	p.Glu455Ala
CoBM3	RED1	YLR263W	chrXII.672772	c.2433T C	p.Asp811Asp
CoBM4	RKM3	YBR030W	chrII.299270	c.979G C	p.Gly327Arg
CoBM4	ERG1	YGR175C	chrVII.848366	c.58G T	p.Asp20Tyr
CoBM5	VTC1	YER072W	chrV.303000	c.196delA	p.Thr66fs
CoBM5	YCT1	YLL055W	chrXII.30835	c.727C G	p.Pro243Ala
CoBM5	YHC1	YLR298C	chrXII.724909	c.508A G	p.Asn170Asp
CoBM5	PLB2	YMR006C	chrXIII.278590	c.1092C G	p.Asn364Lys
CoBM5	RIM11	YMR139W	chrXIII.547166	c.1042G A	p.Val348Ile
CoBM6	SHP1	YBL058W	chrII.112395	c.959A T	p.Glu320Val
CoBM6	RBK1	YCR036W	chrIII.193474	c.178C T	p.Arg60*
CoBM6	PKP1	YIL042C	chrIX.275280	c.1013C A	p.Pro338His
CoBM6	VTC4	YJL012C	chrX.413090	c.310G T	p.Glu104*
CoBM6	URB1	YKL014C	chrXI.415085	c.1829A C	p.Glu610Ala
CoBM6	NFT1	YKR103W	chrXI.655246	c.2167A G	p.Ile723Val
CoBM6	DUS4	YLR405W	chrXII.930419	c.631C T	p.Leu211Leu
CoBM6	MCT1	YOR221C	chrXV.756662	c.897C T	p.Phe299Phe
CoBM7	TFB1	YDR311W	chrIV.1086043	c.979G T	p.Asp327Tyr
CoBM7	PMA1	YGL008C	chrVII.482195	c.472G C	p.Gly158Arg
CoBM7	SFP1	YLR403W	chrXII.927464	c.1897G A	p.Asp633Asn
CoBM7	BUL2	YML111W	chrXIII.48465	c.1524T A	p.Asn508Lys
CoBM7	RRP6	YOR001W	chrXV.327032	c.201T C	p.Phe67Phe
CoBM8	EBS1	YDR206W	chrIV.864180	c.2127A T	p.Glu709Asp
CoBM8	VTC1	YER072W	chrV.302912	c.107G A	p.Trp36*
CoBM8	NSR1	YGR159C	chrVII.806709	c.948C T	p.Ser316Ser
CoBM8	PTK2	YJR059W	chrX.547433	c.1649_1650delGA	p.Arg550fs
CoBM8	PTK2	YJR059W	chrX.547441	c.1655C T	p.Thr552Ile
CuBM10	RSE1	YML049C	chrXIII.176494	c.1812C T	p.Thr604Thr
CuBM11	TFG1	YGR186W	chrVII.869872	c.2099T C	p.Phe700Ser
CuBM12	RSE1	YML049C	chrXIII.176494	c.1812C T	p.Thr604Thr
CuBM13	RSE1	YML049C	chrXIII.176494	c.1812C T	p.Thr604Thr
CuBM14	TFG1	YGR186W	chrVII.869872	c.2099T C	p.Phe700Ser
CuBM14	BUL1	YMR275C	chrXIII.817667	c.915G T	p.Met305Ile
CuBM14	FIG4	YNL325C	chrXIV.29337	c.2042G A	p.Arg681Lys
CuBM14	PYK2	YOR347C	chrXV.985697	c.766C T	p.Leu256Leu
CuBM15	COQ1	YBR003W	chrII.243326	c.518C A	p.Pro173His
CuBM17	TFG1	YGR186W	chrVII.869872	c.2099T C	p.Phe700Ser
CuBM18	ABP1	YCR088W	chrIII.265691	c.624A C	p.Leu208Phe
CuBM18	ROG1	YGL144C	chrVII.232669	c.1839A C	p.Lys613Asn

CuBM18	TFG1	YGR186W	chrVII.869872	c.2099T C	p.Phe700Ser
CuBM18	PRP2	YNR011C	chrXIV.644572	c.2379C T	p.Thr793Thr
CuBM3	PMA1	YGL008C	chrVII.482217	c.450G T	p.Leu150Phe
CuBM4	RSC1	YGR056W	chrVII.602841	c.1181G T	p.Arg394Ile
CuBM4	RSE1	YML049C	chrXIII.176494	c.1812C T	p.Thr604Thr
CuBM6	DNF1	YER166W	chrV.513891	c.1148G C	p.Arg383Thr
CuBM6	ATG2	YNL242W	chrXIV.195289	c.3966A G	p.Leu1322Leu
CuBM7	BLM10	YFL007W	chrVI.127204	c.3726C T	p.His1242His
CuBM7	TFG1	YGR186W	chrVII.869872	c.2099T C	p.Phe700Ser
CuBM9	MMS4	YBR098W	chrII.442065	c.551G C	p.Ser184Thr
CuBM9	TFG1	YGR186W	chrVII.869872	c.2099T C	p.Phe700Ser
CuBM9	KSP1	YHR082C	chrVIII.271417	c.132T G	p.Val44Val
MnBM12	VCX1	YDL128W	chrIV.233168	c.517C G	p.Leu173Val
MnBM12	ERG27	YLR100W	chrXII.341936	c.127C A	p.Pro43Thr
MnBM12	SSK2	YNR031C	chrXIV.681959	c.3475G T	p.Glu1159*
MnBM12	DSE4	YNR067C	chrXIV.757064	c.2036G A	p.Gly679Asp
MnBM12	PDR10	YOR328W	chrXV.932506	c.704T A	p.Ile235Asn
MnBM13	SMY2	YBR172C	chrII.579318	c.2055C T	p.Asp685Asp
MnBM13	VPS74	YDR372C	chrIV.1221843	c.307G T	p.Glu103*
MnBM13	FYV10	YIL097W	chrIX.181615	c.1189C T	p.His397Tyr
MnBM13	UBP5	YER144C	chrV.459312	c.912A G	p.Gln304Gln
MnBM13	MAM3	YOL060C	chrXV.214417	c.1720delA	p.Thr574fs
MnBM14	CNE1	YAL058W	chrI.37834	c.371C T	p.Thr124Met
MnBM14	CNE1	YAL058W	chrI.38041	c.578C T	p.Ser193Leu
MnBM14	FLC2	YAL053W	chrI.48206	c.2308A G	p.Asn770Asp
MnBM14	OAF1	YAL051W	chrI.48640	c.77C T	p.Ala26Val
MnBM14	FIG2	YCR089W	chrIII.270029	c.2596G A	p.Ala866Thr
MnBM14	CLB3	YDL155W	chrIV.178021	c.1249G A	p.Ala417Thr
MnBM14	VCX1	YDL128W	chrIV.233180	c.529G A	p.Ala177Thr
MnBM14	MSS2	YDL107W	chrIV.269955	c.1035G A	p.Leu345Leu
MnBM14	QRI7	YDL104C	chrIV.273879	c.998G T	p.Arg333Ile
MnBM14	SUM1	YDR310C	chrIV.1083280	c.1037C T	p.Thr346Met
MnBM14	PIB1	YDR313C	chrIV.1089472	c.608C T	p.Ala203Val
MnBM14	PAU10	YDR542W	chrIV.1523306	c.58G A	p.Ala20Thr
MnBM14	ZRT1	YGL255W	chrVII.21582	c.605A G	p.Glu202Gly
MnBM14	UTP8	YGR128C	chrVII.748798	c.1294G A	p.Asp432Asn
MnBM14	UTP8	YGR128C	chrVII.749839	c.253G A	p.Ala85Thr
MnBM14	SYF2	YGR129W	chrVII.750554	c.155C T	p.Ala52Val
MnBM14	YOR1	YGR281W	chrVII.1055438	c.2615C T	p.Ala872Val
MnBM14	CIC1	YHR052W	chrVIII.211267	c.420A G	p.Leu140Leu
MnBM14	SSZ1	YHR064C	chrVIII.226595	c.547G A	p.Ala183Thr
MnBM14	PCL5	YHR071W	chrVIII.237545	c.542C T	p.Pro181Leu
MnBM14	ERG7	YHR072W	chrVIII.240532	c.1435C T	p.His479Tyr
MnBM14	LAM1	YHR155W	chrVIII.407313	c.211C T	p.Gln71*
MnBM14	LAM1	YHR155W	chrVIII.407513	c.411C T	p.Asn137Asn
MnBM14	YPK1	YKL126W	chrXI.206869	c.1163A T	p.Glu388Val
MnBM14	MDM30	YLR368W	chrXII.858040	c.501C T	p.Tyr167Tyr
MnBM14	NAR1	YNL240C	chrXIV.199110	c.868C T	p.Arg290*
MnBM14	FYV6	YNL133C	chrXIV.374578	c.115C T	p.Gln39*
MnBM14	TOP2	YNL088W	chrXIV.461419	c.3716G A	p.Ser1239Asn

MnBM14	MKT1	YNL085W	chrXIV.469502	c.2372G A	p.Arg791Lys
MnBM14	SWS2	YNL081C	chrXIV.476401	c.219A G	p.Ala73Ala
MnBM14	MLF3	YNL074C	chrXIV.487720	c.405A T	p.Ser135Ser
MnBM14	TOP1	YOL006C	chrXV.315291	c.97G C	p.Ala33Pro
MnBM15	NA	NA	chrM.14419	NA	NA
MnBM15	CDC25	YLR310C	chrXII.755928	c.1065delG	p.Arg356fs
MnBM16	SUB2	YDL084W	chrIV.305733	c.497A G	p.Tyr166Cys
MnBM16	MET10	YFR030W	chrVI.216146	c.2835C T	p.Ile945Ile
MnBM16	MAM3	YOL060C	chrXV.214928	c.1209delG	p.Leu405fs
MnBM16	PET127	YOR017W	chrXV.361851	c.440G A	p.Ser147Asn
MnBM16	ULS1	YOR191W	chrXV.695079	c.2605G C	p.Val869Leu
MnBM17	LRG1	YDL240W	chrIV.23136	c.314T G	p.Leu105Trp
MnBM17	ERG9	YHR190W	chrVIII.484871	c.27G A	p.Leu9Leu
MnBM17	MPA43	YNL249C	chrXIV.180823	c.200A G	p.Gln67Arg
MnBM17	MAM3	YOL060C	chrXV.215066	c.1072G T	p.Glu358*
MnBM18	ALD5	YER073W	chrV.304100	c.71C A	p.Ser24Tyr
MnBM18	BIR1	YJR089W	chrX.588774	c.1057C T	p.Arg353Cys
MnBM18	CDC25	YLR310C	chrXII.753381	c.3589_3612del	p.Val1197_Leu1204del
MnBM20	CDC25	YLR310C	chrXII.755855	c.1139T A	p.Leu380His
MnBM20	CDC25	YLR310C	chrXII.755857	c.1136delG	p.Ser379fs
MnBM21	NA	NA	chrM.25342	NA	NA
MnBM21	NA	NA	chrM.26112	NA	NA
MnBM21	CDC25	YLR310C	chrXII.752946	c.4047delA	p.Lys1349fs
MnBM23	ARO3	YDR035W	chrIV.522083	c.268G A	p.Glu90Lys
MnBM23	ADR1	YDR216W	chrIV.896208	c.1174C T	p.His392Tyr
MnBM23	NPL3	YDR432W	chrIV.1329113	c.331C A	p.Arg111Ser
MnBM23	TRT2	tT(CGU)K	chrXI.46762	c.44delG	p.Gly15fs
MnBM23	CDC25	YLR310C	chrXII.755637	c.1357T A	p.Tyr453Asn
MnBM23	CDC25	YLR310C	chrXII.755641	c.1353T A	p.Tyr451*
MnBM24	PRI2	YKL045W	chrXI.354438	c.946G T	p.Asp316Tyr
MnBM24	CDC25	YLR310C	chrXII.755784	c.1210A T	p.Asn404Tyr
MnBM24	CDC25	YLR310C	chrXII.755785	c.1209T A	p.Asn403Lys
MnBM24	CDC25	YLR310C	chrXII.755790	c.1203delT	p.Asp401fs
MnBM25	CDC25	YLR310C	chrXII.753045	c.3949G T	p.Glu1317*
MnBM25	PDR10	YOR328W	chrXV.934229	c.2427T A	p.Tyr809*
MnBM27	CDC25	YLR310C	chrXII.755841	c.1152dupA	p.Gln385fs
MnBM27	MSC6	YOR354C	chrXV.1001702	c.1524T G	p.Asn508Lys
MnBM28	VCX1	YDL128W	chrIV.233157	c.506C T	p.Ala169Val
MnBM29	HBT1	YDL223C	chrIV.58214	c.2192C A	p.Thr731Lys
MnBM29	VCX1	YDL128W	chrIV.233168	c.517C G	p.Leu173Val
MnBM29	FZF1	YGL254W	chrVII.22857	c.554T A	p.Leu185His
MnBM31	AGP1	YCL025C	chrIII.76154	c.1765delA	p.Ile589fs
MnBM31	AGP1	YCL025C	chrIII.76159	c.1761G T	p.Leu587Leu
MnBM31	CCW12	YLR110C	chrXII.369713	c.386C A	p.Ala129Asp
MnBM31	MAM3	YOL060C	chrXV.214417	c.1720delA	p.Thr574fs
MnBM31	PEP12	YOR036W	chrXV.400693	c.346G A	p.Val116Met
MnBM31	HIR2	YOR038C	chrXV.403773	c.1616T G	p.Val539Gly
MnBM32	MSS2	YDL107W	chrIV.269200	c.280G A	p.Asp94Asn
MnBM32	SBE2	YDR351W	chrIV.1178933	c.268G A	p.Ala90Thr
MnBM32	HXT13	YEL069C	chrV.22913	c.319C T	p.Arg107Cys

MnBM32	YFL021C-A	YFL021C-A	chrVI.96312	c.304G A	p.Ala102Thr
MnBM32	MDN1	YLR106C	chrXII.366244	c.-2506C T	NA
MnBM32	RMP1	YLR145W	chrXII.432455	c.288A T	p.Gly96Gly
MnBM32	CDC25	YLR310C	chrXII.756549	c.444delG	p.Arg148fs
MnBM32	VRP1	YLR337C	chrXII.804694	c.413C T	p.Ala138Val
MnBM32	TUS1	YLR425W	chrXII.984340	c.1447T C	p.Leu483Leu
MnBM32	RCO1	YMR075W	chrXIII.414724	c.743G A	p.Arg248Lys
MnBM32	ILV2	YMR108W	chrXIII.484091	c.8G A	p.Arg3Lys
MnBM32	ISU1	YPL135W	chrXVI.297897	c.345G A	p.Leu115Leu
MnBM34	SFH5	YJL145W	chrX.145859	c.700A C	p.Arg234Arg
MnBM34	UTH1	YKR042W	chrXI.519756	c.230C A	p.Ser77*
MnBM34	PHR1	YOR386W	chrXV.1068424	c.1586T A	p.Val529Asp
MnBM38	COG1	YGL223C	chrVII.80104	c.262A T	p.Thr88Ser
MnBM38	FRE6	YLL051C	chrXII.37938	c.1534A G	p.Ser512Gly
MnBM38	KRE5	YOR336W	chrXV.952618	c.2846C G	p.Ser949*
MnBM38	GPB1	YOR371C	chrXV.1033961	c.222A G	p.Lys74Lys
MnBM39	ACT1	YFL039C	chrVI.58389	c.-3693C T	NA
MnBM39	PDR1	YGL013C	chrVII.470618	c.1681C T	p.Arg561*
MnBM39	RRP46	YGR095C	chrVII.675732	c.611A T	p.Glu204Val
MnBM39	BNI4	YNL233W	chrXIV.214433	c.2512A T	p.Ile838Leu
MnBM42	CCR4	YAL021C	chrI.112637	c.723C G	p.Asp241Glu
MnBM42	CCR4	YAL021C	chrI.113278	c.82C T	p.Leu28Leu
MnBM42	MRPL36	YBR122C	chrII.484228	c.276T C	p.Ala92Ala
MnBM42	SWC5	YBR231C	chrII.682726	c.365G A	p.Arg122His
MnBM42	YIH1	YCR059C	chrIII.223643	c.588A G	p.Gln196Gln
MnBM42	UGA3	YDL170W	chrIV.157116	c.799C A	p.Leu267Ile
MnBM42	OSH2	YDL019C	chrIV.417674	c.3841G A	p.Asp1281Asn
MnBM42	YCF1	YDR135C	chrIV.726227	c.1325A G	p.Lys442Arg
MnBM42	YRA1	YDR381W	chrIV.1237754	c.431T C	p.Ile144Thr
MnBM42	TOM1	YDR457W	chrIV.1371088	c.1299T G	p.Ile433Met
MnBM42	HEH2	YDR458C	chrIV.1381715	c.332A G	p.Asp111Gly
MnBM42	SUC2	YIL162W	chrIX.38717	c.1333G A	p.Val445Ile
MnBM42	TAO3	YIL129C	chrIX.110175	c.3063A G	p.Lys1021Lys
MnBM42	KGD1	YIL125W	chrIX.124369	c.1681T G	p.Phe561Val
MnBM42	RPI1	YIL119C	chrIX.137759	c.119A G	p.Glu40Gly
MnBM42	PRI1	YIR008C	chrIX.374079	c.228C T	p.Asn76Asn
MnBM42	DAL2	YIR029W	chrIX.411668	c.862T A	p.Ser288Thr
MnBM42	FMP52	YER004W	chrV.159636	c.57C T	p.His19His
MnBM42	CAJ1	YER048C	chrV.247483	c.675G A	p.Glu225Glu
MnBM42	DOT6	YER088C	chrV.334086	c.1103C A	p.Ser368Tyr
MnBM42	COG3	YER157W	chrV.485939	c.1152G T	p.Arg384Ser
MnBM42	BRR2	YER172C	chrV.533465	c.2557T A	p.Tyr853Asn
MnBM42	PDA1	YER178W	chrV.546977	c.161A G	p.Gln54Arg
MnBM42	FAU1	YER183C	chrV.553782	c.188T G	p.Ile63Ser
MnBM42	RPL2A	YFR031C-A	chrVI.221115	c.157G A	p.Gly53Ser
MnBM42	TOS3	YGL179C	chrVII.163625	c.1467G A	p.Met489Ile
MnBM42	HUL5	YGL141W	chrVII.239990	c.1638G T	p.Trp546Cys
MnBM42	ITC1	YGL133W	chrVII.259225	c.1519A T	p.Ser507Cys
MnBM42	SNT2	YGL131C	chrVII.264038	c.1822C A	p.Leu608Ile
MnBM42	CUE3	YGL110C	chrVII.302721	c.691A T	p.Lys231*

MnBM42	SPC105	YGL093W	chrVII.336233	c.1348C T	p.Pro450Ser
MnBM42	CWH41	YGL027C	chrVII.444280	c.1864G C	p.Val622Leu
MnBM42	STT3	YGL022W	chrVII.454170	c.1767G T	p.Trp589Cys
MnBM42	GSC2	YGR032W	chrVII.550683	c.2420G T	p.Arg807Met
MnBM42	ACB1	YGR037C	chrVII.559830	c.165G A	p.Lys55Lys
MnBM42	SKN1	YGR143W	chrVII.775395	c.203G T	p.Gly68Val
MnBM42	CWC22	YGR278W	chrVII.1047684	c.954G A	p.Ala318Ala
MnBM42	YOR1	YGR281W	chrVII.1053072	c.249G T	p.Gln83His
MnBM42	IMA1	YGR287C	chrVII.1068655	c.337T C	p.Cys113Arg
MnBM42	OPI1	YHL020C	chrVIII.66824	c.633C T	p.Ser211Ser
MnBM42	YCK1	YHR135C	chrVIII.373427	c.883dupA	p.Arg295fs
MnBM42	YJL211C	YJL211C	chrX.37037	c.164G A	p.Cys55Tyr
MnBM42	NUC1	YJL208C	chrX.40977	c.207T A	p.His69Gln
MnBM42	URA2	YJL130C	chrX.170952	c.1416T C	p.Gly472Gly
MnBM42	YHC3	YJL059W	chrX.325172	c.209G T	p.Arg70Ile
MnBM42	TIM54	YJL054W	chrX.334668	c.404A C	p.Asn135Thr
MnBM42	IRC8	YJL051W	chrX.340621	c.835G T	p.Val279Phe
MnBM42	MTR4	YJL050W	chrX.342637	c.116A G	p.Gln39Arg
MnBM42	MHP1	YJL042W	chrX.362671	c.1423G T	p.Glu475*
MnBM42	RAD26	YJR035W	chrX.498452	c.1098G T	p.Gln366His
MnBM42	TAH11	YJR046W	chrX.522532	c.485C T	p.Thr162Ile
MnBM42	ZRT3	YKL175W	chrXI.118899	c.107G A	p.Arg36His
MnBM42	UIP5	YKR044W	chrXI.522478	c.464C T	p.Ala155Val
MnBM42	VPS13	YLL040C	chrXII.54731	c.8915G A	p.Gly2972Asp
MnBM42	VPS13	YLL040C	chrXII.56151	c.7495G T	p.Val2499Phe
MnBM42	IES3	YLR052W	chrXII.247694	c.494T A	p.Leu165Gln
MnBM42	RPL22A	YLR061W	chrXII.263199	c.6C T	p.Ala2Ala
MnBM42	HRT3	YLR097C	chrXII.337183	c.83G T	p.Gly28Val
MnBM42	ECM22	YLR228C	chrXII.600763	c.1701C T	p.Tyr567Tyr
MnBM42	IRC20	YLR247C	chrXII.633065	c.290C T	p.Ala97Val
MnBM42	MCM5	YLR274W	chrXII.693876	c.2322T C	p.Gly774Gly
MnBM42	REC102	YLR329W	chrXII.787194	c.656T G	p.Val219Gly
MnBM42	VID22	YLR373C	chrXII.871029	c.339C T	p.Ser113Ser
MnBM42	UTP21	YLR409C	chrXII.936628	c.606A G	p.Ser202Ser
MnBM42	ZDS2	YML109W	chrXIII.53046	c.1407C T	p.Asn469Asn
MnBM42	WAR1	YML076C	chrXIII.112816	c.2532G A	p.Met844Ile
MnBM42	WAR1	YML076C	chrXIII.114669	c.679C A	p.Pro227Thr
MnBM42	USA1	YML029W	chrXIII.217976	c.615G T	p.Gln205His
MnBM42	VBA1	YMR088C	chrXIII.443426	c.1677T C	p.Ser559Ser
MnBM42	RRB1	YMR131C	chrXIII.533259	c.1440G A	p.Lys480Lys
MnBM42	PET111	YMR257C	chrXIII.779986	c.2046G A	p.Ala682Ala
MnBM42	PRC1	YMR297W	chrXIII.862525	c.604A T	p.Ile202Phe
MnBM42	IPI3	YNL182C	chrXIV.297316	c.312C T	p.Asp104Asp
MnBM42	BDS1	YOL164W	chrXV.7199	c.1025C T	p.Thr342Ile
MnBM42	GAS4	YOL132W	chrXV.72169	c.870A G	p.Ser290Ser
MnBM42	MDH2	YOL126C	chrXV.82001	c.920G A	p.Gly307Glu
MnBM42	CPA1	YOR303W	chrXV.882919	c.21A G	p.Lys7Lys
MnBM42	RAD17	YOR368W	chrXV.1027373	c.531G T	p.Glu177Asp
MnBM42	FAS2	YPL231W	chrXVI.110829	c.2178T C	p.Gly726Gly
MnBM42	PPQ1	YPL179W	chrXVI.208977	c.821T C	p.Leu274Pro

MnBM42	NIP100	YPL174C	chrXVI.222669	c.105A C	p.Glu35Asp
MnBM42	MEX67	YPL169C	chrXVI.229047	c.1792C T	p.Gln598*
MnBM42	MLH3	YPL164C	chrXVI.241077	c.421A G	p.Ile141Val
MnBM42	RNY1	YPL123C	chrXVI.317909	c.1037A G	p.Asn346Ser
MnBM42	SSE1	YPL106C	chrXVI.351134	c.1142C T	p.Ala381Val
MnBM42	MOT1	YPL082C	chrXVI.399531	c.4553C T	p.Pro1518Leu
MnBM42	MNN9	YPL050C	chrXVI.461357	c.610G T	p.Asp204Tyr
MnBM42	VTC3	YPL019C	chrXVI.515669	c.1349delC	p.Ser450fs
MnBM42	RPA135	YPR010C	chrXVI.580614	c.583A G	p.Ile195Val
MnBM42	ATG11	YPR049C	chrXVI.662014	c.2660G T	p.Arg887Ile
MnBM42	SEC8	YPR055W	chrXVI.670433	c.2758G A	p.Ala920Thr
MnBM42	MRL1	YPR079W	chrXVI.699233	c.365G A	p.Cys122Tyr
MnBM42	GPH1	YPR160W	chrXVI.862883	c.1578C A	p.Phe526Leu
NiBM11	BSD2	YBR290W	chrII.783400	c.810G T	p.Leu270Phe
NiBM11	PHO84	YML123C	chrXIII.25111	c.1240dupG	p.Asp414fs
NiBM12	IST2	YBR086C	chrII.421076	c.1966G T	p.Ala656Ser
NiBM12	YLR198C	YLR198C	chrXII.548748	c.-1103C T	NA
NiBM14	APL5	YPL195W	chrXVI.178825	c.2603A G	p.Glu868Gly
NiBM17	UGA4	YDL210W	chrIV.85469	c.1200G T	p.Leu400Phe
NiBM21	YEF1	YEL041W	chrV.76333	c.390G A	p.Trp130*
NiBM21	NAM8	YHR086W	chrVIII.278622	c.470T C	p.Val157Ala
NiBM24	RKM3	YBR030W	chrII.299270	c.979G C	p.Gly327Arg
NiBM24	BSD2	YBR290W	chrII.783212	c.622C T	p.Gln208*
NiBM24	LOS1	YKL205W	chrXI.53317	c.3267A G	p.Val1089Val
NiBM27	SNF7	YLR025W	chrXII.195133	c.687delA	p.Ala230fs
NiBM28	PHO81	YGR233C	chrVII.957826	c.385A T	p.Lys129*
NiBM28	TCO89	YPL180W	chrXVI.205993	c.747delG	p.Asp251fs
NiBM30	FCY2	YER056C	chrV.266649	c.1465C T	p.Gln489*
NiBM30	RCK2	YLR248W	chrXII.634675	c.424G A	p.Asp142Asn
NiBM4	UBX7	YBR273C	chrII.749280	c.92G T	p.Arg31Leu
NiBM4	SMC2	YFR031C	chrVI.217643	c.2464C A	p.Gln822Lys
NiBM4	PRP8	YHR165C	chrVIII.436626	c.323C T	p.Thr108Ile
NiBM4	PHO84	YML123C	chrXIII.24560	c.1240dupG	p.Asp414fs
NiBM6	IDP1	YDL066W	chrIV.334907	c.73C A	p.Pro25Thr
NiBM6	PFK26	YIL107C	chrIX.165562	c.200G T	p.Arg67Ile
NiBM6	PRP8	YHR165C	chrVIII.432396	c.4553C T	p.Ser1518Phe
NiBM9	PHO84	YML123C	chrXIII.25469	c.331delA	p.Thr111fs
ZnBM11	BSD2	YBR290W	chrII.783400	c.810G T	p.Leu270Phe
ZnBM11	PHO84	YML123C	chrXIII.25111	c.690C A	p.Tyr230*
ZnBM12	ACC1	YNR016C	chrXIV.660428	c.947G T	p.Gly316Val
ZnBM15	ACC1	YNR016C	chrXIV.660428	c.947G T	p.Gly316Val
ZnBM16	STE5	YDR103W	chrIV.660940	c.2591C T	p.Ser864Phe
ZnBM16	ECM14	YHR132C	chrVIII.369079	c.716G C	p.Trp239Ser
ZnBM16	SWT1	YOR166C	chrXV.648177	c.326T C	p.Val109Ala
ZnBM17	PMA1	YGL008C	chrVII.482300	c.367C A	p.Pro123Thr
ZnBM17	RRP46	YGR095C	chrVII.675732	c.611A T	p.Glu204Val
ZnBM19	DOA4	YDR069C	chrIV.587104	c.616C T	p.Gln206*
ZnBM22	BUD19	YJL188C	chrX.76405	c.106C T	p.Gln36*
ZnBM23	ADE6	YGR061C	chrVII.613265	c.2701G C	p.Val901Leu
ZnBM23	PBS2	YJL128C	chrX.178468	c.1636G C	p.Asp546His

ZnBM28	YLR372W	YLR372W	chrXII.868274	c.921C A	p.Tyr307*
ZnBM29	PMA1	YGL008C	chrVII.480586	c.2081A C	p.Tyr694Ser
ZnBM31	HIS4	YCL030C	chrIII.66139	c.2195C T	p.Thr732Ile
ZnBM37	PMA1	YGL008C	chrVII.479933	c.2734A G	p.Thr912Ala
ZnBM38	PHO84	YML123C	chrXIII.25178	c.623G A	p.Trp208*
ZnBM38	HHF2	YNL030W	chrXIV.577027	c.302_*4del	p.Phe101fs
ZnBM39	PBS2	YJL128C	chrX.178937	c.1167G T	p.Lys389Asn
ZnBM41	SNT2	YGL131C	chrVII.263930	c.1930G C	p.Asp644His
ZnBM41	PMA1	YGL008C	chrVII.482054	c.613G A	p.Glu205Lys
ZnBM42	PHO84	YML123C	chrXIII.25233	c.567delT	p.Phe189fs
ZnBM43	RPS2	YGL123W	chrVII.278292	c.676A G	p.Thr226Ala
ZnBM43	PTK2	YJR059W	chrX.546698	c.913delG	p.Glu305fs
ZnBM43	PTK2	YJR059W	chrX.546700	c.914A T	p.Glu305Val
ZnBM44	HSP104	YLL026W	chrXII.90370	c.1748A T	p.Gln583Leu
ZnBM44	PHO23	YNL097C	chrXIV.441972	c.387A T	p.Pro129Pro
ZnBM45	SAK1	YER129W	chrV.418015	c.735T C	p.Gly245Gly
ZnBM45	PMA1	YGL008C	chrVII.480320	c.2347G C	p.Gly783Arg
ZnBM45	RIM21	YNL294C	chrXIV.79837	c.412_423del	p.Leu138_Leu141del
ZnBM46	SAK1	YER129W	chrV.418015	c.735T C	p.Gly245Gly
ZnBM46	PMA1	YGL008C	chrVII.480320	c.2347G C	p.Gly783Arg
ZnBM47	PTK2	YJR059W	chrX.546347	c.561C G	p.Tyr187*

Table S5. Genes with three or more SNP mutations

Gene code	Metal	lines	Gene product description
CDC25	Mn	9	membrane-bound guanine nucleotide exchange factor
HUL5	Cd, Mn	5, MnBM42	ubiquitin ligase
MAM3	Co, Mn	2, 3	magnesium homeostasis and required for Mg2+ ions sequestration in the vacuole
PTK2	Co, Zn	1, 2	regulation of ion transport across plasma membrane
SFP1	Cd, Co	3, 1	stress response
SIW14	Co	5	vacuolar protein sorting
VCX1	Mn	4	vacuolar H+/Ca2+ exchanger
PHO84	Co, Ni, Zn	1, 3, 3	low-affinity manganese transporter
PMA1	Co, Cu, Zn	2, 1, 6	regulator of cytoplasmic pH 477 and plasma membrane potential