

Table S1: Mutations in cold-evolved *S. cerevisiae* diploid populations

Population	Location	Gene(s)	Mutation
P7	chrIV:1323639	<i>BNA7</i>	coding-nonsynonymous : I201L
	chrVII:469931	<i>PDR1</i>	coding-nonsynonymous : I790F
	chrXVI:166971	<i>SGE1</i>	5' upstream
	chrXVI:933898	<i>YPR197C</i>	coding-nonsynonymous: *188Y
	chrXIII:1-221882	Includes <i>PHO84</i>	LOH, multiple tract lengths, loss of S288C allele
P7F	chrIV:1323639	<i>BNA7</i>	coding-nonsynonymous: I201L
	chrXVI:933898	<i>YPR197C</i>	coding-nonsynonymous: *188Y
P8F	chrIV:1323639	<i>BNA7</i>	coding-nonsynonymous: I201L
	chrXVI:167064	<i>TPK2</i>	coding-nonsynonymous: P270R
	chrXVI:933898	<i>YPR197C</i>	coding-nonsynonymous: *188Y
	chrXIII:1-86512	Includes <i>PHO84</i>	LOH: loss of S288C allele
P9	chrXIII: 1-221882	Includes <i>PHO84</i>	LOH, multiple tract lengths, loss of S288C allele
P9F	chrXIII: 1-76194	Includes <i>PHO84</i>	LOH: loss of S288C allele
P10	chrXIII: 1-221882	Includes <i>PHO84</i>	LOH, multiple tract lengths, loss of S288C allele
G3F	chrIV: 971450	<i>RKM4</i>	coding-nonsynonymous: E9Q
	chrIV: 1214351	<i>YPR1</i>	coding-nonsynonymous: T150P
	chrXVI: 166845	<i>TPK2</i>	coding-nonsynonymous: E197A
	chrXVI:24965-376139		LOH: loss of S288C
G4	chrXVI: 166595	<i>TPK2</i>	coding-nonsynonymous: H114N
	chrIX: 1- 439888		CNV: whole chromosome amplification of S288C
	chrV: 374386-576874		LOH: loss of S288C
G4F	chrIV: 857504	<i>RAV2</i>	coding-nonsynonymous: F150L
	chrV: 374386-576874		LOH: loss of S288C
	chrIX: 1- 439888		CNV: whole chromosome amplification of S288C
	chrXIII: 742394	<i>RNA1</i>	coding-nonsynonymous: N114N
	chrXVI: 166595	<i>TPK2</i>	coding-nonsynonymous: H114N
G6	chrII:211737	<i>HIR1</i>	coding-nonsynonymous: G695indel
	chrVI: 71469	<i>RIM15</i>	coding-nonsynonymous: P987S
	chrVII: 624765	<i>YGR067C</i>	coding-nonsynonymous: Y8N
	chrXII:1-388272		LOH: loss of GRF167 allele
	chrXII:537901-1078177		LOH: loss of S288C allele
	chrXII:202237	<i>RPL15A</i>	coding-synonymous: S118S
	chrXV:587229	<i>YOR139C</i>	coding-synonymous: H38H
	chrXV:587229	<i>SFL1</i>	coding-nonsynonymous: W83*
	chrM:27782	<i>ATP8</i>	coding-synonymous: Y39Y
G6F	chrVI: 71469	<i>RIM15</i>	coding-nonsynonymous: P987S

	chrX: 359553	<i>GYP6</i>	coding-nonsynonymous: L42I
	chrXII:537901-1078177		LOH: loss of GRF167 allele
	chrXV: 587229	<i>YOR139C</i>	coding-synonymous: H38H
	chrXV: 587229	<i>SFL1</i>	coding-nonsynonymous: W83*
S3	chrII: 484215	<i>MRPL36</i>	coding-nonsynonymous: S97G
	chrV: 277004	<i>FCY22</i>	coding-synonymous: L145L
	chrXVI: 166597	<i>TPK2</i>	coding-nonsynonymous: H114Q
S3F	chrII: 484215	<i>MRPL36</i>	coding-nonsynonymous: S97G
	chrIV: 1199893	<i>ESC2</i>	coding-synonymous: L237L
	chrVI: 57656	<i>TUB2</i>	coding-nonsynonymous: D441N
	chrVII: 1068908	<i>IMA1</i>	coding-synonymous: F28F
	chrXIII: 29268	<i>NDI1</i>	coding-synonymous: P180P
	chrXIV: 139482	<i>LYP1</i>	coding-synonymous: S311S
	chrXVI: 166597	<i>TPK2</i>	coding-nonsynonymous: H114Q
	chrXVI: 340228	<i>CAR1</i>	coding-synonymous: V95V
S4F	chrII: 484215	<i>MRPL36</i>	coding-nonsynonymous: S97G
	chrXVI: 166596	<i>TPK2</i>	coding-nonsynonymous: H114R
	chrVI: 45080	<i>OTU1</i>	coding-nonsynonymous: P161A
	chrXV: 624828	<i>SLP1</i>	coding-nonsynonymous: G34S
	chrXV: 810716	<i>TRE2</i>	5'-upstream
	chrXVI: 166971	<i>TPK2</i>	coding-nonsynonymous: T239R
	chrXVI: 176208	<i>APL5</i>	5'-upstream
S5F	chrII: 1- 813184		CNV: whole chromosome amplification of GRF167 allele
S6	chrII: 528651	<i>MAK5</i>	coding-nonsynonymous: E112V
	chrX: 419920-745751		Segmental amplification of GRF167 allele
	chrXII: 537901-1078177		LOH: loss of S288C allele
	chrXV: 810716	<i>TRE2</i>	5'-upstream
	chrXVI:1- 948066		CNV: whole chromosome amplification of GRF167 allele
	chrXVI: 166595	<i>TPK2</i>	coding-nonsynonymous: H114Y
S6F	chrX: 424951-745751		CNV: segmental amplification of GRF167 allele
	chrXV: 810716	<i>TRE2</i>	5'-upstream

LOH: loss of heterozygosity; CNV: copy number variant. Breakpoints of CNV and LOH are approximate. Note, because of population sequencing, it is not possible to definitively determine whether CNV are also accompanied by LOH.