

**Table S1 M-Y species list and abundances in sample**

Genus	Species	In sample				Reference			
		Strain	Source	Ploidy	Optical density	Strain	Size (Mb)	Download source	Finished?
<i>Saccharomyces</i>	<i>cerevisiae</i>	FY4H	M. Dunham	1	0.079088	FY	12.2	downloads.yeastgenome.org	Yes
<i>Saccharomyces</i>	<i>cerevisiae</i>	CEN.PK	P. Kotter	1	0.071645	CEN.PK	11.5	downloads.yeastgenome.org	No
<i>Saccharomyces</i>	<i>cerevisiae</i>	RM11-1A	L. Kruglyak	1	0.084903	RM11-1A	11.7	www.broadinstitute.org	Yes
<i>Saccharomyces</i>	<i>cerevisiae</i>	SK1	A. Deutschbauer	2	0.075366	SK1	11.9	cbio.mskcc.org/public/SK1_MvO/	Yes
<i>Saccharomyces</i>	<i>paradoxus</i>	YDG613	D. Greig	2	0.076762		11.7	saccharomycessensustricto.org	Yes
<i>Saccharomyces</i>	<i>mikatae</i>	FM356	M. Johnston	2	0.08188	IFO 1815	11.5	saccharomycessensustricto.org	Yes
<i>Saccharomyces</i>	<i>kudriavzevii</i>	FM527	M. Johnston	2	0.008141	IFO 1802	11.3	saccharomycessensustricto.org	Yes
<i>Saccharomyces</i>	<i>bayanus</i> var. <i>uvarum</i>	YZB5-113	Y. Zhang	1	0.055827	CBS 7001	11.5	saccharomycessensustricto.org	Yes
<i>Naumovozyma</i> ( <i>Saccharomyces</i> )	<i>castellii</i>	4310	D. Bartel	1	0.082577	NRRL Y-12630	11.2	downloads.yeastgenome.org	No
<i>Lachancea</i>	<i>waltii</i>	Kwaltii ura3	B. Brewer	1	0.086067	NRRL Y-8285	10.2	fangman-brewer- gbrowse.gs.washington.edu	Mostly
<i>Lachancea</i> ( <i>Saccharomyces</i> )	<i>kluveri</i>	FM628	M. Johnston	1	0.096534	CBS 3082	11.3	genolevures.org/sakl.html	Yes
<i>Kluyveromyces</i>	<i>lactis</i>	MW98-8C	C. Newlon	1	0.055827	NRRL Y-1140	10.7	genolevures.org/klla.html	Yes
<i>Kluyveromyces</i>	<i>wickerhamii</i>	Y-8286	USDA/ARS	1	0.062805	UCD 54-210	9.81	www.ncbi.nlm.nih.gov	No
<i>Ashbya</i> ( <i>Eremothecium</i> )	<i>gossypii</i>	WT	S. Jaspersen	1	Can't measure	ATCC 10895	8.74	genolevures.org/ergo.html	Yes
<i>Scheffersomyces</i> ( <i>Pichia</i> )	<i>stipitis</i>	Y-11545	USDA/ARS	1	0.080251	CBS 6054	15.4	www.ncbi.nlm.nih.gov	Yes
<i>Pichia</i> ( <i>Komagataella</i> )	<i>pastoris</i>	JC308	J. Cregg	1	0.002326	GS115	9.21	www.ncbi.nlm.nih.gov	Yes