

**Table S2 M-3D species list and abundances in sample**

Domain	Genus	Species	In sample			Reference			
			Strain	Source	Optical density	Strain	Size (Mb)	Download source	Finished?
Eukaryota	<i>Saccharomyces</i>	<i>cerevisiae</i>	FY4H	M. Dunham	1.02	FY	12.2	downloads.yeastgenome.org	Yes
Eukaryota	<i>Zygosaccharomyces</i>	<i>rouxii</i>	Y-229	USDA/ARS	0.66	CBS 732	9.76	genolevures.org/zyro.html	Yes
Eukaryota	<i>Lachancea</i> ( <i>Kluyveromyces</i> )	<i>thermotolerans</i>	Y-8284	USDA/ARS	0.98	CBS 6340	9.39	genolevures.org/klth.html	Yes
Eukaryota	<i>Kluyveromyces</i>	<i>aestuarii</i>	YB-4510	USDA/ARS	1.04	ATCC 18862	9.91	www.ncbi.nlm.nih.gov	No
Eukaryota	<i>Hansenula (Ogataea)</i>	<i>polymorpha</i>	Y-5445	USDA/ARS	1.21	DL-1	8.86	www.ncbi.nlm.nih.gov	Yes
Eukaryota	<i>Pichia (Komagataella)</i>	<i>pastoris</i>	JC 308	J. Cregg	0.61	GS115	9.22	www.ncbi.nlm.nih.gov	Yes
Eukaryota	<i>Schizosaccharomyces</i>	<i>pombe</i>	YFS 103	N. Rhind	0.52	ASM294	12.6	www.pombase.org	Yes
Eukaryota	<i>Schizosaccharomyces</i>	<i>japonicus</i>	YFS 760	N. Rhind	0.19	yFS275	11.7	www.broadinstitute.org	No
Archaea	<i>Methanococcus</i>	<i>maripaludis</i>	S2	J. Leigh	~0.1	S2	1.67	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Escherichia</i>	<i>coli</i>	AG 111	H. Merrikkh	0.26	K-12	4.69	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Vibrio (Aliivibrio)</i>	<i>fischeri</i>	ES114	P. Greenberg	0.25	ES114	4.27	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Pseudomonas</i>	<i>fluorescens</i>	Pf-5	C. Harwood	0.4	Pf0-1	6.44	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Acinetobacter</i>	<i>baylyi</i>	ADP1	C. Harwood	0.12	ADP1	3.60	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Burkholderia</i>	<i>thailandensis</i>	E264	C. Harwood	0.6	E264	6.72	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Agrobacterium</i>	<i>tumefaciens</i>	P4	C. Queitsch	0.37	P4	6.33	www.ncbi.nlm.nih.gov	Mostly
Bacteria	<i>Rhodopseudomonas</i>	<i>palustris</i>	CGA009	C. Harwood	0.32	CGA 009	5.47	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Flavobacterium</i>	<i>johnsoniae</i>	UW 101	C. Harwood	0.55	UW 101	6.10	www.ncbi.nlm.nih.gov	Yes
Bacteria	<i>Bacillus</i>	<i>subtilis</i>	HM1/168	H. Merrikkh	0.35	168	4.22	www.ncbi.nlm.nih.gov	Yes