Supplementary table S1. Strains and genomes used in this study and relevant information pertaining to them.

Strain	Other designations	Substrate of isolation	Geographic location	Phylogeny	Heterozigous sites (Q >40)	Monosporic (MD) / single cell (SCD) derivative	A	B	C	AQY1	AQY1	AQY1	AQY2	AQY2	AQY2	RTM1	BIO1 / BIO6	PAD1	FDC1	FZF1	FZF1 Fig 4	FZF1 Fig S2	SSU1	SSU1R	Genome data	Reference
AWRI 1631	N 96	Wine	Australia	Wine	n.d.				8/19	NF	A881del		NF	11bp del				F	F	W					PRJNA30553	Borneman et al. 2008
AWRI 796	Active Dry Wine Yeast	Commercial wine yeast	South Africa	Wine	1041 *			DUP		F			NF	11bp del				F	F						PRJNA48559	Borneman et al. 2011
EXF 6719		Wine must	Cuber, Slovenia	Wine	2053				17/19	NF	A881del		NF	11bp del				F	F	W					PRJEB7601	Almeida et al. 2015
ZP 641		Spontaneous red wine fermentati	Castelo de Vide, Portugal	Wine	1484					NF	A881del		NF	11bp del				F	F						PRJEB7601	Almeida et al. 2015
L1374		Wine (must from País variety)	Cauquenes, Chile	Wine	1550			5/5		NF	A881del		NF	11bp del				F	F						SGRP2	Bergström et al. 2014
L1528		Wine (must from Cabernet variety	Cauquenes, Chile	Wine	1334			5/5		NF	A881del		NF	11bp del				F	F						SGRP2	Bergström et al. 2014
Lalvin BM45	AWRI 1486	Commercial yeast (white wine)		Wine	1280			5/5	2/19	NF	A881del		NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
Lalvin CY-3079	AWRI 2078	Commercial yeast (red wine)		Wine	1974			5/5	4/19	NF	A881del		NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
Lalvin W15		Commercial yeast (white and red wine)		Wine	2209			5/5		F			NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
PR		Pasteur Red		Wine	1715					NF	A881del		NF	11bp del				F	F	W					PRJEB19382	Almeida et al. 2017
PYCC 4072		commercial wine yeast (Fermivin)	Portugal	Wine	1889					NF	A881del		NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
TUM V1		Bordeaux wine		Wine	1827					NF	A881del		NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
Uvaferm SGV		Commercial yeast (red wine)		Wine	1734				4/19	NF	A881del		NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
Uvaferm VRB		Commercial yeast (red wine)		Wine	2750				19/19	NF	A881del		NF	11bp del				F	F						PRJEB19382	Almeida et al. 2017
Vin 13	AWRI 1537	Commercial wine yeast		Wine	15216 *			Dup	2/19	F			NF	11bp del				F	F						PRJNA48563	Borneman et al. 2011
VL3	B 6, AWRI 1688	Commercial wine yeast		Wine	9904 *			5/5	8/19	NF	A881del		NF	11bp del				F	F						PRJNA48565	Borneman et al. 2011
WE 372		Commercial wine yeast	Cape Town, South Africa	Wine	4354			5/5		F			NF	11bp del				F	F						PRJNA60199	Justin Fay, Washington University
YJM 1332		Wine	Italy	Wine	1660				2/19	NF	A881del		NF	11bp del				F	F						PRJNA189896	Strope et al. 2015
YJM 1336		Wine	Italy	Wine	1547					NF	A881del		NF	11bp del				F	F						PRJNA189897	Strope et al. 2015
YJM 1341	NRRL Y-12637	Grape must	South Africa	Wine	2350					NF	A881del		NF	11bp del				F	F						PRJNA189899	Strope et al. 2015
YJM 1415	NRRL Y-268	Wine	France	Wine	1256			5/5	19/19	NF	A881del		NF	11bp del				F	F						PRJNA189914	Strope et al. 2015
EC 1118	Prise de Mousse	Industrial strain isolated from Cha	France	Wine	n.d.		15/15	5/5	19/19	NF	A881del		NF	11bp del				F	F	W					PRJEA37863	Novo et al. 2009
IOC 18-2007	AWRI 2340	Commercial yeast		Wine	2181			5/5		NF	A881del		F					F	F						PRJEB19382	Almeida et al. 2017
IOC 9002		Commercial wine yeast		Wine	1224			5/5	4/19	NF	A881del		NF	11bp del				F	F	W					PRJNA264372	Almeida et al. 2015
Lalvin QA23		Commercial wine yeast	Portugal	Wine	18861 *		15/15	TRIP	19/19	NF	A881del		F					F	F						PRJNA48561	Borneman et al. 2011
YJM 1574	AWRI 1775	Wine		Wine	1796			5/5		NF	A881del		NF	11bp del				F	F						PRJNA189934	Strope et al. 2015
YJM 270	CBS 2807	Wine	Slovenia	Wine	1662				19/19	NF	A881del		F					F	F						PRJNA189852	Strope et al. 2015
PYCC 4074		commercial wine yeast (Fermicha	Portugal	Wine	2263		15/15	5/5		NF	A881del		F					F	F						PRJEB19382	Almeida et al. 2017
PYCC 6722	CBS 5155	wine	South Armenia	Wine	2121					NF	A881del		F					F	F						PRJEB19382	Almeida et al. 2017
PYCC 6726		Jerez-wine	Spain	Wine	4939					NF	A881del		F					F	F						PRJEB19382	Almeida et al. 2017
PYCC 6729		Jerez-wine	Armenia	Wine	2901					NF	A881del		F					F	F						PRJEB19382	Almeida et al. 2017
UFMG-CM-Y215	SP9	Cachaça	São Paulo, Brazil	Wine	3242	MD				NF	A881del		NF	11bp del				F	F						PRJEB24932	This study
UFMG-CM-Y617	JB 03	Jabuticaba wine	Santa Bárbara, Minas Gerais	Wine	2805	SCD				NF	A881del		NF	11bp del				F	F	W					PRJEB24932	This study
UFMG-CM-Y618	JB 79	Jabuticaba wine	Santa Bárbara, Minas Gerais	Wine	3394	MD		5/5	17/19	NF	A881del		NF	11bp del				F	F						PRJEB24932	This study
UFMG-CM-Y619	JB 107	Jabuticaba wine	Santa Bárbara, Minas Gerais	Wine	3317	MD		5/5	18/19	NF	A881del		NF	11bp del				F	F						PRJEB24932	This study
UFMG-CM-Y620	V68	Wine	Casa Nova, Bahia, Brazil	Wine	3036	MD		5/5		F			NF	11bp del				F	F						PRJEB24932	This study
UFMG-CM-Y621	V152	Wine	Casa Nova, Bahia, Brazil	Wine	3277	MD		5/5		F			NF	11bp del				F	F						PRJEB24932	This study
PYR 4b	DBQ 26	*Quercus pubescens*	Halkidiki, Greece	MO	2738					F			F					F	F						PRJEB7601	Almeida et al. 2015
OakRom 3-2a		Oak	Near Bucarest, Romania	MO	2366					F			F					F	F						PRJEB7675	Almeida et al. 2015
EXF 7200		*Quercus robur*	Jasenovo polje, Montenegro	MO	3001					F			F					F	F						PRJNA264372	Almeida et al. 2015
HUN 9.1s1	DBS 14	Oak	Hungary	MO	2745					F			F					F	F						PRJEB7601	Almeida et al. 2015
3.10	DBVPG 10100	*Quercus cerris*	Parco del Monte Subasio, Ita	MO	3800					F			F					F	F						PRJEB7601	Almeida et al. 2015
ZP 541		*Fagus sylvatica*	Adagoi, Portugal	MO	2684					F			F					F	F						PRJEB7601	Almeida et al. 2015
ZP 1008		*Quercus faginea*	Eja, Melres, Douro, Portugal	MO	2409					n.d.			n.d.			n.d.	n.d.	n.d.	n.d.						PRJNA264372	Almeida et al. 2015
ZP 570		*Fraxinus* sp.	Paul Boquilobo, Portugal	MO	2813					F			F					F	F						PRJEB7601	Almeida et al. 2015
ZP 848		*Quercus ilex*	Alter do Chão, Portugal	MO	2656					F			F					F	F						PRJEB7675	Almeida et al. 2015
ZP 850		*Quercus ilex*	Alconorales Natural Park, Ar	MO	2869					F			F					F	F						PRJEB7601	Almeida et al. 2015
MB 7c		*Quercus pubescens*	Montbarri, Southern France	MO	3752					n.d.			n.d.			n.d.	n.d.	n.d.	n.d.						PRJNA264372	Almeida et al. 2015
ZP 560		*Quercus pyrenaica*	Castelo de Vide, Portugal	MO	2553					F			F					F	F						PRJEB7601	Almeida et al. 2015
BE013		Beer (Ale refermentation)	Belgium	Beer 2	n.d.			5/5		NF	A881del		F					F	F	W					MBZP00000000	Gallone et al. 2016
BE021		Beer (Pale ale)	Canada	Beer 2	n.d.			5/5		NF	A881del		F					F	F						MBZH00000000	Gallone et al. 2016
BE032		Beer	England	Beer 2	n.d.			5/5	4/19	NF	A881del		NF	11bp del				F	F						MBYW00000000	Gallone et al. 2016
BE063		Beer	England	Beer 2	n.d.		15/15	5/5		NF	V121Mpol		F					F	F	W					MBXR00000000	Gallone et al. 2016
BE083		Beer (Saison)	Belgium	Beer 2	n.d.			5/5		NF	A881del		NF	11bp del				F	F						MBWX00000000	Gallone et al. 2016
BE092		Beer (Strong ale)	Belgium	Beer 2	n.d.		15/15			NF	A881del		F					F	F						MBWO00000000	Gallone et al. 2016
UFMG-CM-Y030	CAY1007	Cachaça (commercial strain)	Minas Gerais, Brazil	C1	31074	SCD		5/5		NF	A881del		NF	G25del				F	F	C W					PRJEB24932	This study
UFMG-CM-Y625	CAY2170	Cachaça	Novo Cruzeiro, Minas Gerais	C1	4737	SCD		5/5		NF	T498del		F					F	F	W					PRJEB24932	This study
UFMG-CM-Y251	SC1	Cachaça	Santa Catarina, Brazil	C1	12655	SCD		5/5	19/19	NF	A881del		NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y630	SC3	Cachaça	Santa Catarina, Brazil	C1	3570	MD		5/5		F			NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y631	SC7	Cachaça	Santa Catarina, Brazil	C1	4036	MD		5/5		NF	A881del		NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y627	RJ1	Cachaça	Rio de Janiero, Brazil	C1	28953	SCD		5/5		NF	A881del		NF	11bp del				F	F	W					PRJEB24932	This study
UFMG-CM-Y629	RJW03	Cachaça	Pernambuco, Brazil	C1	4332	SCD				NF	T498del		NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y624	CAY1834	Cachaça	Salinas, Minas Gerais, Brazil	C1	27658	MD				NF	T498del		F					F	F	W					PRJEB24932	This study
UFMG-CM-Y632	TO1	Cachaça	Tocantins, Brazil	C2	12225	SCD				NF	A881del		NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y633	T09	Cachaça	Tocantins, Brazil	C2	6833	MD				NF	A881del		F					F	F	W					PRJEB24932	This study
UFMG-CM-Y634	TOC1301	Cachaça	Tocantins, Brazil	C2	21251	MD		5/5		NF	A881del		NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y635	TOC1346	Cachaça	Tocantins, Brazil	C2	22600	MD		5/5		NF	A881del		NF	11bp del				F	F	C					PRJEB24932	This study
UFMG-CM-Y260	YEF034	*Tapirira guianensis*	Tocantins, Brazil	C2	3236	MD		5/5		F			F					F	F	W					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y636	YEF036	*Tapirira guianensis*	Tocantins, Brazil	C2	3747	MD		5/5		NF	T498del		NF	11bp del				F	F	W					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y623	CAY44	Cachaça	Betim, Minas Gerais, Brazil	?	34631	SCD		5/5		F			NF	11bp del				F	F	W					PRJEB24932	This study
UFMG-CM-Y628	RJ15	Cachaça	Rio de Janeiro, Brazil	?	81659	SCD		5/5		NF	A817del		NF	11bp del				F	F	C W					PRJEB24932	This study
UFMG-CM-Y637	PE6	Cachaça	Pernambuco, Brazil	?	4809	MD		4/5	4/19	F			F					F	F	W					PRJEB24932	This study
UFMG-CM-Y638	TOC1309	Cachaça	Tocantins, Brazil	?	5932	MD		5/5		F			F					F	F	W					PRJEB24932	This study
UFMG-CM-Y639	TOC1349-1	*Tapirira guianensis*	Tocantins, Brazil	?	5249	MD		5/5		F			F					F	F	W					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y626	CBS 7960	Bioethanol-producing strain from	Brazil	Bioethanol	n.d.			4/5		NF	A881del		NF	11bp del				F	F	W					PRJNA60391	Justin Fay, Washington University
JAY 291		Haploid derivative of bioethanol-p	Brazil	Bioethanol	n.d.			5/5		NF	A881del		NF	11bp del				F	F	W					PRJNA32809	Argueso et al. 2009
BG-1		Bioethanol-producing strain from	Brazil	Bioethanol	n.d.			4/5		NF	A881del		NF	20bp ins				F	F	C					PRJNA352845	Coutouné 2017
PYCC 4226	HET	Commercial baker's yeast		Bread	30081			4/5	2/19	NF	A881del		NF		792stop			F	F	W					ERS1108635	Gonçalves et al. 2016
Platinum	HET	Commercial baker's yeast		Bread	42278			4/5	15/19	NF	V121Mpol	A822ins	NF		792stop			F	F	W					ERS1108633	Gonçalves et al. 2016

AP13.1		Baker's yeast	Portugal	Bread	53091		5/5	17/19	NF	V121Mpol		NF	11bp del				NF	NF	C W	PRJEB24932	This study
Morocco Bread G17	HET	Baker's yeast		Bread	61910		5/5		NF	V121Mpol	A822ins	F					F	NF	C W	SRR403236	Dunn et al. 2012
TUM 506		British ale	Great Britain	Bread	50225		4/5	16/19	NF	V121Mpol	A822ins	NF	11bp del				F	F	W	ERS1108634	Gonçalves et al. 2016
TUM 480		Opaque beer	South Africa	Bread	41556		5/5		NF		A822ins	NF	11bp del				F	NF	C W	ERS1108636	Gonçalves et al. 2016
BE005		Ale beer	Belgium	Bread	n.d.		4/5	17/19	NF	V121Mpol		F					F	NF	W	MBZX00000000	Gallone et al. 2016
BE029		Ale beer (refermentation)	Belgium	Bread	n.d.		4/5	17/19	NF	V121Mpol		NF	11bp del				F	NF	W	MBYZ00000000	Gallone et al. 2016
BR004		Bread	Belgium	Bread	n.d.		5/5	17/19	NF	V121Mpol		NF	11bp del				F	NF	W	MBVV00000000	Gallone et al. 2016
UFMG-CM-Y223	PEW01	Cachaça	Rio de Janeiro, Brazil	Bread	46892	MD	3/5		NF	V121Mpol	A881del	F					F	F	C	PRJEB24932	This study
UFMG-CM-Y622	PE3	Cachaça	Pernambuco, Brazil	Bread	37077	SCD	4/5	17/19	NF	V121Mpol	A822ins	NF		786stop			F	F	C W	PRJEB24932	This study
UFMG-CM-Y228	SP1	Cachaça	São Paulo, Brazil	Bread	53617	MD	4/5	17/19	NF		A822ins	NF	11bp del				F	F	W	PRJEB24932	This study
TUM 208		Alt beer	Rhineland-Palatinate, Germa	Beer 1 - German	33689				NF	V121Mpol		NF	11bp del	792stop			NF	NF	C	ERS1108617	Gonçalves et al. 2016
TUM 513		California ale	Unknown	Beer 1 - German	33061				NF	V121Mpol		NF	11bp del	792stop			NF	NF		ERS1108618	Gonçalves et al. 2016
TUM 308		Alt beer	Rhineland-Palatinate, Germa	Beer 1 - German	33689				NF	V121Mpol		NF	11bp del	792stop			NF	NF		ERS1108619	Gonçalves et al. 2016
TUM 177		Alt / Kölsch beer	Krefeld, Germany	Beer 1 - German	20371				NF	V121Mpol		NF	11bp del	792stop			NF	NF		ERS1108620	Gonçalves et al. 2016
TUM 174		Regional beer similar to Kölsch be	Mülheim, Germany	Beer 1 - German	21227				NF	V121Mpol		NF	11bp del	792stop			NF	NF		ERS1108621	Gonçalves et al. 2016
TUM 148		Alt beer	Düsseldorf, Germany	Beer 1 - German	32602				NF	V121Mpol		NF	11bp del	792stop			NF	NF		ERS1108622	Gonçalves et al. 2016
TUM 338		Alt beer	Düsseldorf, Germany	Beer 1 - German	35423				NF	V121Mpol		NF	11bp del	792stop			NF	NF		ERS1108623	Gonçalves et al. 2016
BE015		Beer	Germany	Beer 1 - German	n.d.				NF	V121Mpol		NF	11bp del	792stop			NF	NF		MBZN00000000	Gallone et al. 2016
BE046		Beer	Bergium	Beer 1 - German	n.d.				NF	V121Mpol		NF	11bp del	792stop			NF	NF		MBYI00000000	Gallone et al. 2016
BE073		Beer (Hefeweizen)	Germany	Beer 1 - German	n.d.				NF	V121Mpol		NF	11bp del	792stop			NF	NF	C	MBXH00000000	Gallone et al. 2016
BE075		Wheat beer	Belgium	Beer 1 - German	n.d.				NF	V121Mpol	A822ins	NF	11bp del	792stop			F	F		MBXF00000000	Gallone et al. 2016
BE077		Beer (Trappist)	Belgium	Beer 1 - German	n.d.				NF	V121Mpol	A822ins	NF	11bp del	792stop			F	F		MBXD00000000	Gallone et al. 2016
TUM 213		British ale / stout	Great Britain	Beer 1 - British	38169				NF	V121Mpol	A822ins	F					NF	NF		ERS1108624	Gonçalves et al. 2016
TUM 510		British ale	Great Britain	Beer 1 - British	37397				NF	V121Mpol	A822ins	F					NF	NF		ERS1108625	Gonçalves et al. 2016
TUM 503		California ale	Unknown	Beer 1 - British	30324				NF	V121Mpol	A822ins	NF	11bp del				NF	NF		ERS1108626	Gonçalves et al. 2016
FostersO		Commercial brewing ale strain		Beer 1 - British	34874				NF	V121Mpol	A822ins	NF	11bp del				NF	NF	C	ERS1108627	Gonçalves et al. 2016
TUM 165		British ale	Burton-upon-Trend, Great B	Beer 1 - British	28301				NF	V121Mpol	A822ins	NF	11bp del				NF	NF		ERS1108628	Gonçalves et al. 2016
NCYC 1044		British ale		Beer 1 - British	43373				NF	V121Mpol	A822ins	NF	11bp del				NF	NF		SRR403240	Dunn et al. 2012
FostersB		Commercial brewing ale strain		Beer 1 - British	43000				NF	V121Mpol	A822ins	NF	11bp del				NF	NF	C	ERS1108629	Gonçalves et al. 2016
TUM 508		Irish ale / stout	Ireland	Beer 1 - British	44826				NF	V121Mpol	A822ins	NF	11bp del				NF	NF		ERS1108630	Gonçalves et al. 2016
TUM 210		British ale / stout	Great Britain	Beer 1 - British	29225				NF	V121Mpol	A822ins	NF	11bp del				NF	NF		ERS1108631	Gonçalves et al. 2016
TUM 211		British ale / stout	Great Britain	Beer 1 - British	26842				NF	V121Mpol	A822ins	NF		792stop			NF	NF		ERS1108632	Gonçalves et al. 2016
BE065		Beer	US (California)	Beer 1 - British	n.d.				NF	V121Mpol	A822ins	NF	11bp del	792stop			NF	NF		MBXP00000000	Gallone et al. 2016
BE071		Beer	US (San Diego)	Beer 1 - British	n.d.				NF	V121Mpol	A822ins	NF	11bp del				NF	NF		MBXJ00000000	Gallone et al. 2016
BE055		Beer	England	Beer 1 - British	n.d.				NF	V121Mpol	A822ins	F					NF	NF		MBXZ00000000	Gallone et al. 2016
BE048		Beer (Pale ale)	England	Beer 1 - British	n.d.				NF	V121Mpol	A822ins	F					NF	NF		MBYG00000000	Gallone et al. 2016
TUM 381		Belgian beer	Belgium	Beer 1 - Wheat	30358				NF	V121Mpol		F					F	F	C	ERS1108612	Gonçalves et al. 2016
TUM 149		Wheat beer	Munich, Germany	Beer 1 - Wheat	21254				NF	V121Mpol		F					F	F		ERS1108613	Gonçalves et al. 2016
W 205		Hefeweizen ale yeast		Beer 1 - Wheat	31479				NF	V121Mpol		F					F	F		SRR403241	Dunn et al. 2012
TUM 175		Wheat beer	Freising-Weihenstephan, Ge	Beer 1 - Wheat	29902				NF	V121Mpol		F					F	NF		ERS1108615	Gonçalves et al. 2016
TUM 507		Ale Beer from wheatmalt	Unknown	Beer 1 - Wheat	40936				NF	V121Mpol		F					NF	NF	C	ERS1108616	Gonçalves et al. 2016
BE074		Beer (Hefeweizen)	Germany	Beer 1 - Wheat	n.d.				NF	V121Mpol		F					F	F		MBXG00000000	Gallone et al. 2016
BE093		Beer (Hefeweizen)	Germany	Beer 1 - Wheat	n.d.				NF	V121Mpol		F					F	F		MBWN00000000	Gallone et al. 2016
BE072		Beer (Hefeweizen)	Germany	Beer 1 - Wheat	n.d.				NF	V121Mpol		F					F	F		MBXI00000000	Gallone et al. 2016
CBS 435		Sake moto	Nakazawa, Japan	Sake	4906				NF	V121Mpol		NF	G25del				F	NF		ERS1108637	Gonçalves et al. 2016
CBS 1585		Sake moto	Nakazawa, Japan	Sake	2960				NF	V121Mpol		NF	G25del				F	NF		ERS1108638	Gonçalves et al. 2016
CBS 1598		Sake moto	Nakazawa, Japan	Sake	3517				NF	V121Mpol		NF	G25del				F	NF		ERS1108639	Gonçalves et al. 2016
UC 5	UCD612	Sene sake	Kurashi, Japan	Sake	n.d.				NF	V121Mpol		NF	G25del				F	NF	C	PRJNA60197	Justin Fay, Washington University
TUM 184		Alt beer	Düsseldorf, Germany	Sake	4558				NF	V121Mpol		NF	G25del				F	NF		ERS1108640	Gonçalves et al. 2016
Kyokai-no.7	K7	Japanese sake brewerie	Japan	Sake	n.d.				NF	V121Mpol	A822ins	NF	G25del			TRIP	F	NF	C	PRJNA45827	Akao et al. 2011
NRRL-Y-11572		Sake moto	Japan	Sake	3270				NF	V121Mpol		NF	G25del				F	NF		ERS1108641	Gonçalves et al. 2016
Y9	NRRL Y-5997	Fermentation (ragi)	Indonesia	Sake	2932				NF	V121Mpol		NF	G25del				F	NF		PRJNA60205	Justin Fay, Washington University
YJSH1		Bioethanol-producing strain	China	Sake	3084				NF	V121Mpol		NF	G25del				F	NF		PRJNA72403	Zheng et al. 2012
TUM 380		Starter culture for Lambic beer	Belgium	Sake	6522				NF	V121Mpol		NF	G25del				F	F		ERS1108642	Gonçalves et al. 2016
TUM 68		Wheat beer	Freising-Weihenstephan, Ge	Sake	7094				NF	V121Mpol		NF	G25del				F	F		ERS1108643	Gonçalves et al. 2016
TUM 127		Wheat beer	Freising-Weihenstephan, Ge	Sake	5979				NF	V121Mpol		NF	G25del				F	F		ERS1108644	Gonçalves et al. 2016
NRRL-Y-12844		Budod	Phillipines	Sake	10363				NF	V121Mpol		NF	G25del				F	NF		ERS1108645	Gonçalves et al. 2016
Y12	NRRL Y-12663, CBS 40(	Fermentation (palm wine)	Ivory Coast	Sake	15534				NF	V121Mpol		NF	G25del							SGRP2	Bergström et al. 2014
YJM 1479	NRRL Y-6297	Coconut tuba (palm wine)	Philippines	Philippines	3264				n.d.			n.d.			n.d.	n.d.	n.d.	n.d.		PRJNA189929	Strope et al. 2015
YJM 1400	NRRL YB-4081	Guava (fruit)	Philippines	Philippines	2960				NF	V121Mpol		NF	G25del				F	F	C	PRJNA189911	Strope et al. 2015
YJM 1401	NRRL YB-4082	Papaya (fruit)	Philippines	Philippines	2762				n.d.			n.d.			n.d.	n.d.	n.d.	n.d.		PRJNA189912	Strope et al. 2015
NRRL-YB-4084		Coconut sap	Phillipines	Philippines	10363				NF	V121Mpol		F					F	F	C	ERS1108646	Gonçalves et al. 2016
ZP 779		*Quercus acutissima*	Hirusen highland, Okayama	NA / Japan	3509				F			F					F	F		PRJEB7601	Almeida et al. 2015
ZP 781		*Quercus serrata*	Hirusen highland, Okayama	NA / Japan	3333				F			F					F	F		PRJEB7601	Almeida et al. 2015
ZP 785		*Quercus dentata*	Hirusen highland, Okayama	NA / Japan	3510				F			F					F	F		PRJEB7601	Almeida et al. 2015
SDO 3s1		Oak	North Carolina, USA	NA / Japan	3693				F			F					F	F		PRJEB7601	Almeida et al. 2015
YPS 1009		Oak exudate	New Jersey, USA	NA / Japan	2650				n.d.			n.d.			n.d.	n.d.	n.d.	n.d.		PRJNA60223	Justin Fay, Washington University
ZP 1050		*Quercus ilex*	Vendinha, Reguengos de Mo	NA / Japan	3119				F			F					F	F		PRJEB7675	Almeida et al. 2015
YPS 128		*Quercus alba*	Pennsylvania, USA	NA / Japan	3118				F			F					F	F	C	SGRP2	Bergström et al. 2014
ZP 530		*Castanea sativa*	Marão, Campeã, Portugal	NA / Japan	3661				F			F					F	F		PRJEB7601	Almeida et al. 2015
YPS 163		*Quercus rubra*	Pennsylvania, USA	NA / Japan	2673				F			F					F	F		PRJNA28813	Doniger et al. 2008
ZP 656		*Quercus acuta*	Chiba Prefecture, Japan	NA / Japan	3723				F			F					F	F	C	PRJEB7601	Almeida et al. 2015
ZP 651		*Quercus acutissima*	Chiba Prefecture, Japan	NA / Japan	3623				F			F					F	F		PRJEB7601	Almeida et al. 2015
ZP 652		*Quercus acutissima*	Chiba Prefecture, Japan	NA / Japan	3699				F			F					F	F	C	PRJEB7601	Almeida et al. 2015
UFMG-CM-Y255	C2	Non-identified tree	Minas Gerais, Brazil	NA / Japan	5103				F			F					F	F		PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y640	2TERRAPRETA	Soil	Amazonia, Brazil	NA / Japan	5426				F			F					F	F		PRJEB11698	Barbosa et al. 2016
YJM 1447	UWOPS 05-227.2	Bertram palm	Malaysia	Malaysia	n.d.				NF	106bp del		NF	G528del				F	F		PRJNA189923	Strope et al. 2015
UWOPS 03-433.3		Nectar of Bertram palm	Malaysia	Malaysia	1908				NF	106bp del		NF	G528del				n.d.	n.d.	C	ERS1108647	Gonçalves et al. 2016
UWOPS 03-461.4		Nectar of Bertram palm	Malaysia	Malaysia	18636				NF	106bp del		NF	G528del				F	F	C	SGRP2	Bergström et al. 2014
YJM 195	NCYC 762	Palm wine	Nigeria	West Africa	2977				NF	A881del		F					F	F		PRJNA189849	Strope et al. 2015
PW5		Raphia palm wine	Aba, Abia state, Nigeria	West Africa	1175				NF	A881del		F					NF	F	C	PRJNA60181	Justin Fay, Washington University
YJM 1439	NCYC 110	Ginger beer from *Z. officinale*	West Africa	West Africa	2129				F			F					NF	F	C	PRJNA189920	Strope et al. 2015
YJM 1248	NRRL Y-1546	Bili wine from *Osbeckia grandiflor*	West Africa	West Africa	2600				NF	A881del		F					NF	F	C	PRJNA189888	Strope et al. 2015

UFMG-CM-Y643	49-30	*Quercus rubra*	Minas Gerais, Brazil	B1	6562					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y262	C37	*Tapirira guianensis*	Tocantins, Brazil	B1	7501					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y649	TOC1361	*Tapirira guianensis*	Tocantins, Brazil	B1	6059					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y650	TOC1364	*Tapirira guianensis*	Tocantins, Brazil	B1	4749					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y463	C161B	Non-identified tree	Roraima, Brazil	B1	6665					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y464	C203	Non-identified tree	Roraima, Brazil	B1	7034					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y457	C129	Non-identified tree	Roraima, Brazil	B1	6856					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y461	C145	Mushroom	Roraima, Brazil	B1	7540					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y462	CG192	Mushroom	Roraima, Brazil	B1	6917					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y644	C133	Non-identified tree	Roraima, Brazil	B1	6988					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y646	TOC1322.1	*Tapirira guianensis*	Tocantins, Brazil	B1	8246					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y647	TOC1325.1	*Tapirira guianensis*	Tocantins, Brazil	B1	8165					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
YPS 1000		Oak exudate	New Jersey, USA	B1	5103					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y257	C4	*Quercus rubra*	Minas Gerais, Brazil	B1	WINE					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y645	TOC 1318	*Tapirira guianensis*	Tocantins, Brazil	B1	11245					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y266	C53	*Tapirira guianensis*	Tocantins, Brazil	B1	8175					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y455	C45	*Tapirira guianensis*	Tocantins, Brazil	B1	8263					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y264	C49	*Tapirira guianensis*	Tocantins, Brazil	B1	8271					F		F				F	F	C					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y648	TOC 1355	Cachaça	Tocantins, Brazil	B1	7267	MD				F		F				F	F	C					PRJEB24932	Barbosa et al. 2016
UFMG-CM-Y263	C41	*Tapirira guianensis*	Tocantins, Brazil	B3	7580					F		F				F	F	W					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y456	CTP2B	Jequitibá tree	Tocantins, Brazil	B3	46044					F		F				F	F	C	NA				PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y641	TOC1345	*Tapirira guianensis*	Tocantins, Brazil	B3	5385					F		F				F	F	R					PRJEB11698	Barbosa et al. 2016
UFMG-CM-Y642	TOC1365	*Tapirira guianensis*	Tocantins, Brazil	B3	4749					F		F				F	F	R					PRJEB11698	Barbosa et al. 2016

Cachaça	Brazilian strain
Wine - Brazil	
Bioethanol	
Wild - Brazil	

> 20000

* values taken from the literature (see citation)

F	- functional
NF	- non functional
n.d.	- not determined

Sake	Spar allele only	Cosmopolitan
Spar NA	Scer+Spar alleles	Wine
		Recombinant

detected
not detected

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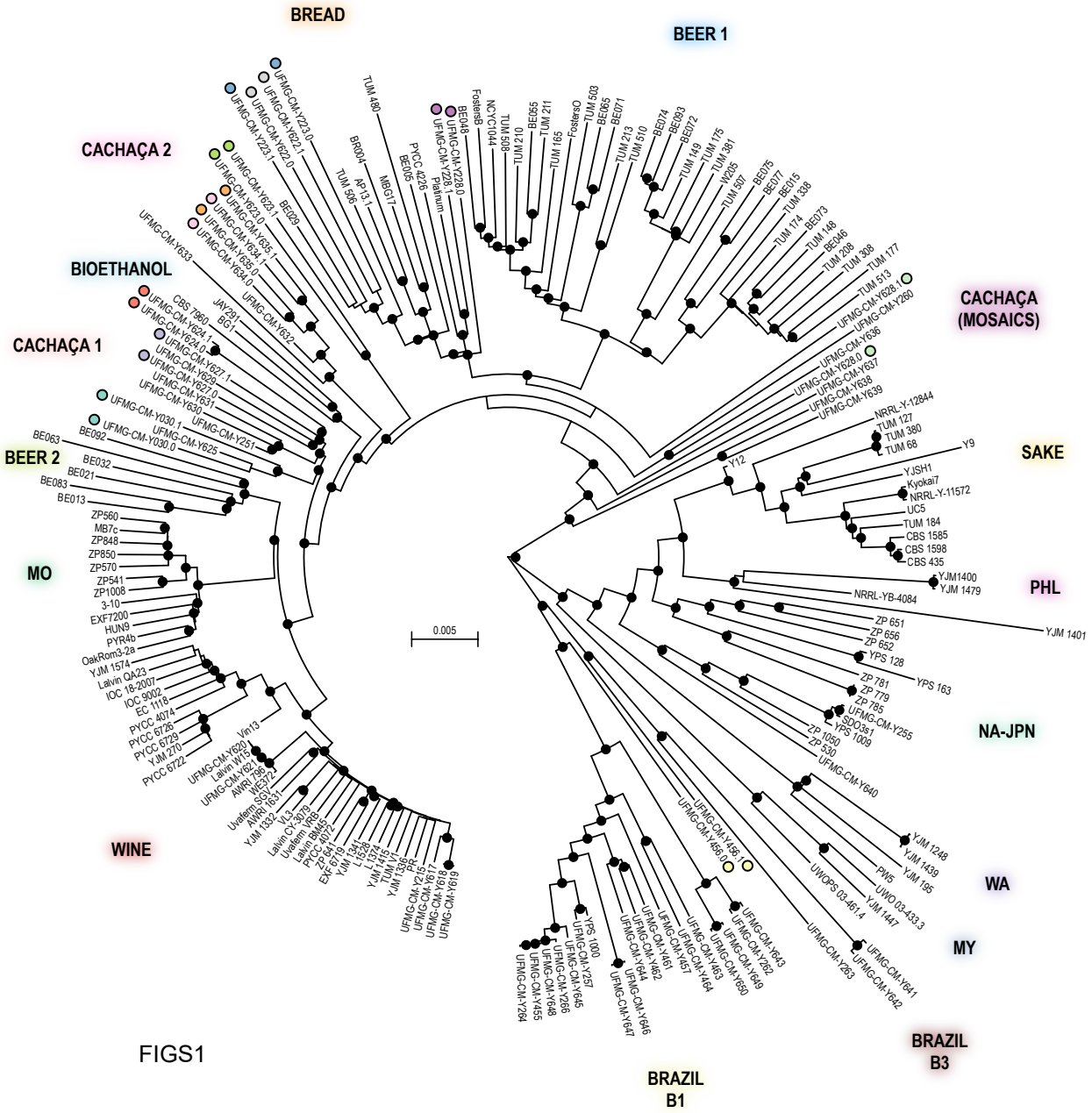
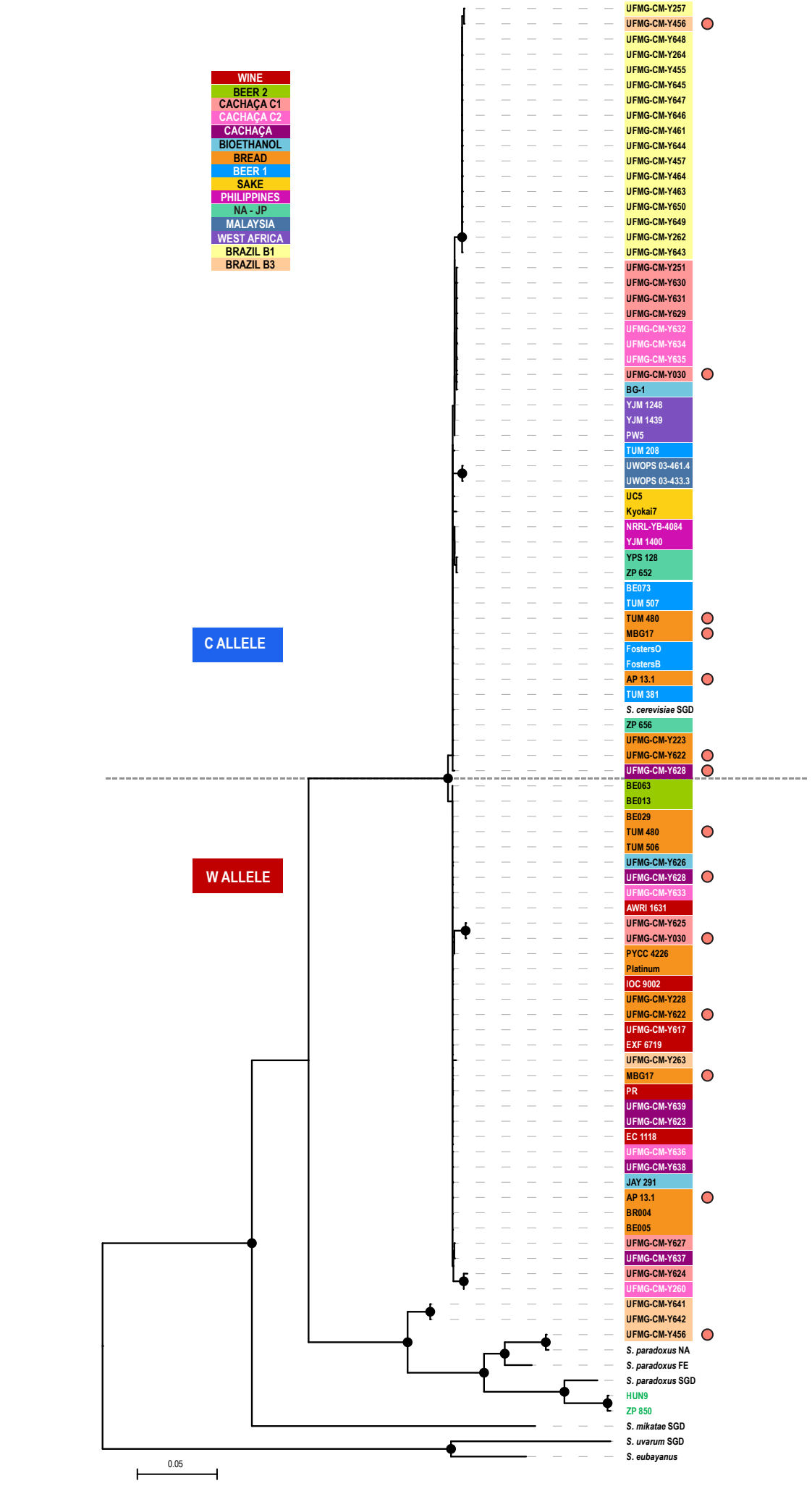
Supplementary table S2. Tolerance to ferulic acid (0.2% w/v, pH 4.5) of cachaça strains with and without *PAD1* / *FDC1* introgression from *S. paradoxus*. Growth was assessed in Yeast-Peptone-Glucose agar medium supplemented with ferulic acid. Strong (+++), intermediate (++) or low (+) growth was recorded after inoculation of serially diluted (10^{-2}, 10^{-3} and 10^{-4}) 10 µl drops of a culture grown in liquid medium without ferulic acid up to a OD_{640nm} of 0.3 – 0.4 and 48h incubation at 25 °C. For comparison the results of two wild Brazilian strains with high resistance to ferulic acid are included.

Strain	*PAD1* / *FDC1* *S. paradoxus* introgressions	Phylogeny	Tolerance to ferulic acid
CAY 1007	present	cachaça	++
CAY 1834	present	cachaça	+
CAY 2170	present	cachaça	+
RJ1	present	cachaça	++
TO1	present	cachaça	++
TOC1301	present	cachaça	+
TOC1346	present	cachaça	++
CAY44	present	cachaça	+
RJW03	absent	cachaça	+
SC1	absent	cachaça	++
SC3	absent	cachaça	+
SC7	absent	cachaça	+
T09	absent	cachaça	+
YEF036	absent	cachaça	+
YEF034	absent	cachaça	++
RJ15	absent	cachaça	+
49-30	absent	wild Brazil B1	+++
TOC 1345	absent	wild Brazil B3	+++


BREAD
BEER 1
CACHAÇA 2
BIOETHANOL
CACHAÇA 1
BEER 2
MO
WINE
CACHAÇA (MOSAICS)
SAKE
PHL
NA-JPN
WA
MY
BRAZIL B3
BRAZIL B1
0.005

FIGS1


WINE
BEER 2
CACHAÇA C1
CACHAÇA C2
CACHAÇA
BIOETHANOL
BREAD
BEER 1
SAKE
PHILIPPINES
NA - JP
MALAYSIA
WEST AFRICA
BRAZIL B1
BRAZIL B3
C ALLELE
W ALLELE
UFMG-CM-Y257
UFMG-CM-Y456
UFMG-CM-Y648
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UFMG-CM-Y634
UFMG-CM-Y635
UFMG-CM-Y030
BG-1
YJM 1248
YJM 1439
PW5
TUM 208
UWOPS 03-461.4
UWOPS 03-433.3
UC5
Kyokai7
NRRL-YB-4084
YJM 1400
YPS 128
ZP 652
BE073
TUM 507
TUM 480
MBG17
FostersO
FostersB
AP 13.1
TUM 381
S. cerevisiae SGD
ZP 656
UFMG-CM-Y223
UFMG-CM-Y622
UFMG-CM-Y628
BE063
BE013
BE029
TUM 480
TUM 506
UFMG-CM-Y626
UFMG-CM-Y628
UFMG-CM-Y633
AWRI 1631
UFMG-CM-Y625
UFMG-CM-Y030
PYCC 4226
Platinum
IOC 9002
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UFMG-CM-Y617
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UFMG-CM-Y639
UFMG-CM-Y623
EC 1118
UFMG-CM-Y636
UFMG-CM-Y638
JAY 291
AP 13.1
BR004
BE005
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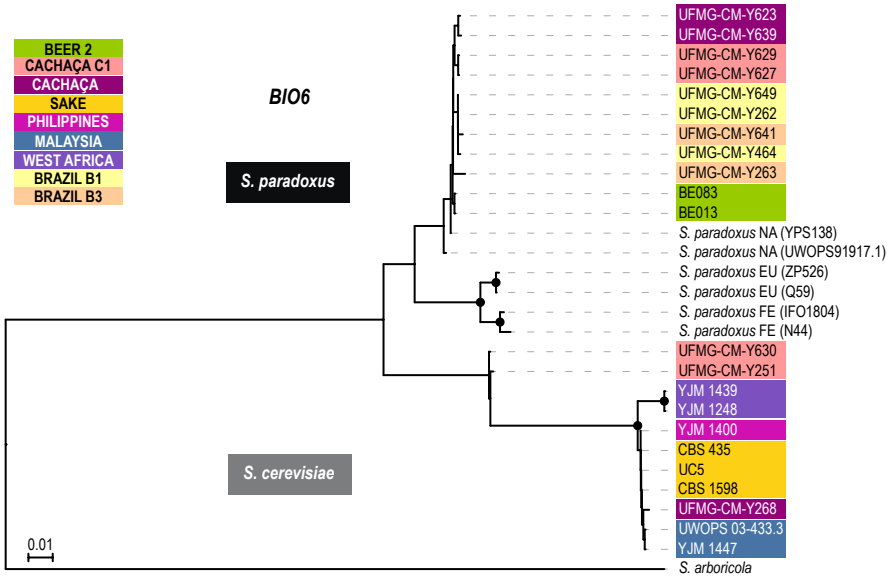
UFMG-CM-Y637
UFMG-CM-Y624
UFMG-CM-Y260
UFMG-CM-Y641
UFMG-CM-Y642
UFMG-CM-Y456
S. paradoxus NA
S. paradoxus FE
S. paradoxus SGD
HUN9
ZP 850
S. mikatae SGD
S. uvarum SGD
S. eubayanus
0.05

FIGS2


BEER 2
CACHAÇA C1
CACHAÇA
SAKE
PHILIPPINES
MALAYSIA
WEST AFRICA
BRAZIL B1
BRAZIL B3
BIO6
S. paradoxus
S. cerevisiae
0.01
UFMG-CM-Y623
UFMG-CM-Y639
UFMG-CM-Y629
UFMG-CM-Y627
UFMG-CM-Y649
UFMG-CM-Y262
UFMG-CM-Y641
UFMG-CM-Y464
UFMG-CM-Y263
BE083
BE013
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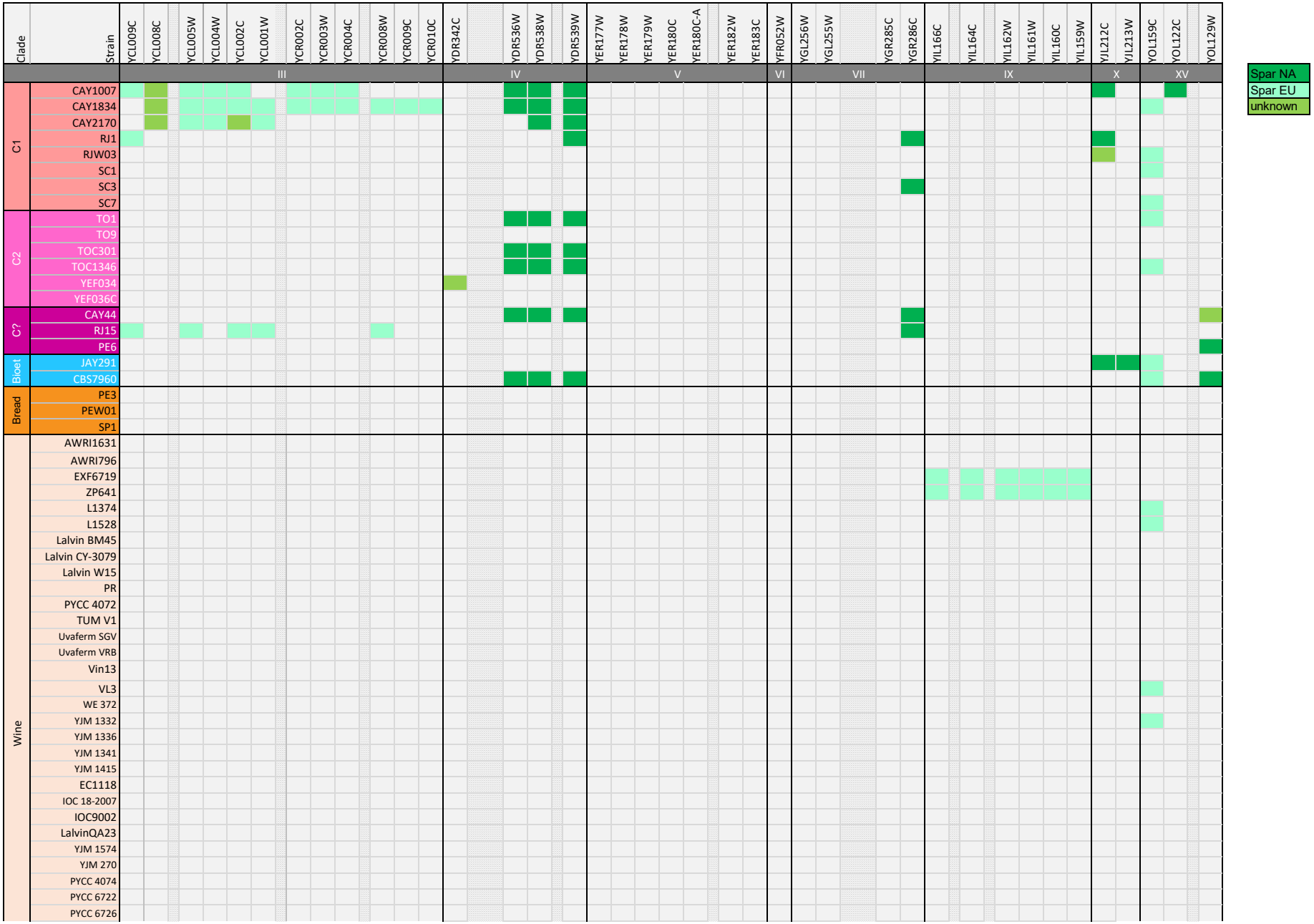
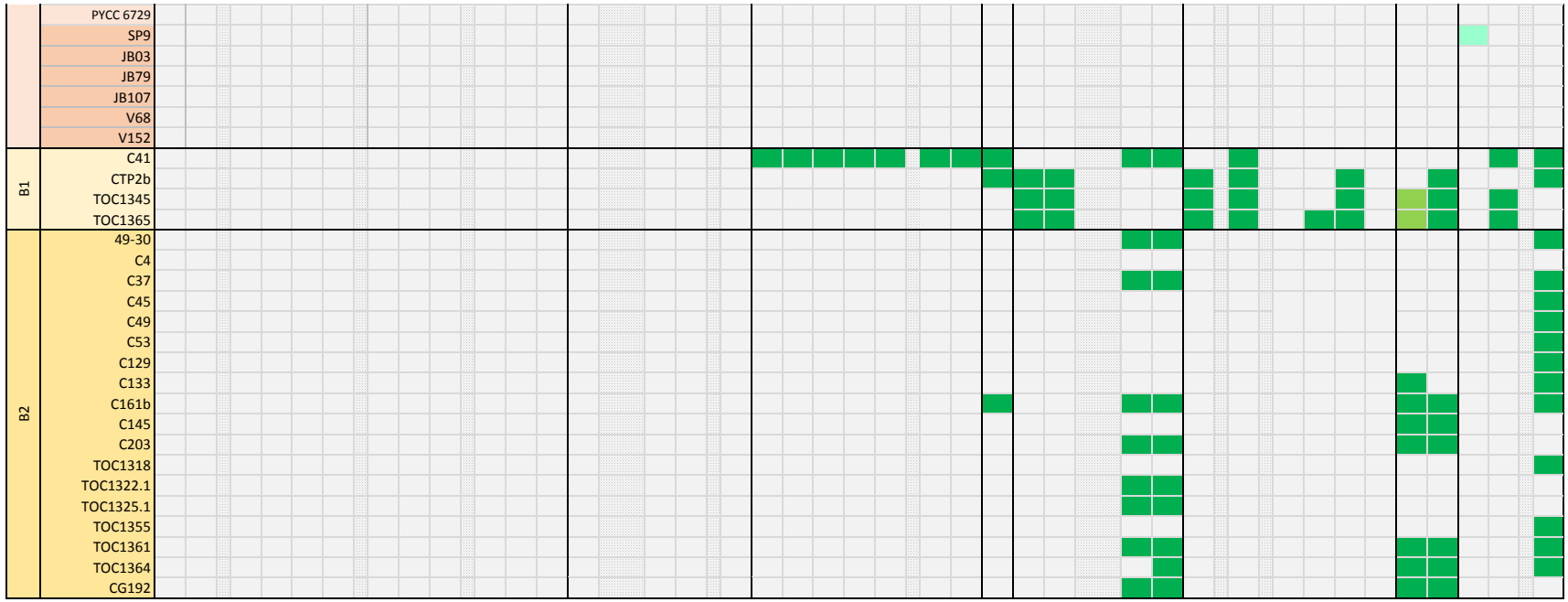
S. paradoxus NA (UWOPS91917.1)
S. paradoxus EU (ZP526)
S. paradoxus EU (Q59)
S. paradoxus FE (IFO1804)
S. paradoxus FE (N44)
UFMG-CM-Y630
UFMG-CM-Y251
YJM 1439
YJM 1248
YJM 1400
CBS 435
UC5
CBS 1598
UFMG-CM-Y268
UWOPS 03-433.3
YJM 1447
S. arboricola

FIGS3

Supplementary figure S4. Introgressions of Saccharomyces paradoxus in the genomes of Brazilian S. cerevisiae cachaça and wild populations and in bioethanol and wine strains (depicted strain by strain). The presence of introgressions is color coded and refers to the donor population of S. paradoxus: European (light green), North American population B (dark green), unknown population or recombinant sequences (brown).

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SP9
JB03
JB79
JB107
V68
V152
B1
C41
CTP2b
TOC1345
TOC1365
B2
49-30
C4
C37
C45
C49
C53
C129
C133
C161b
C145
C203
TOC1318
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