

Supplemental Files

Isolation of yeast strains with higher proline uptake and their applications to beer fermentation

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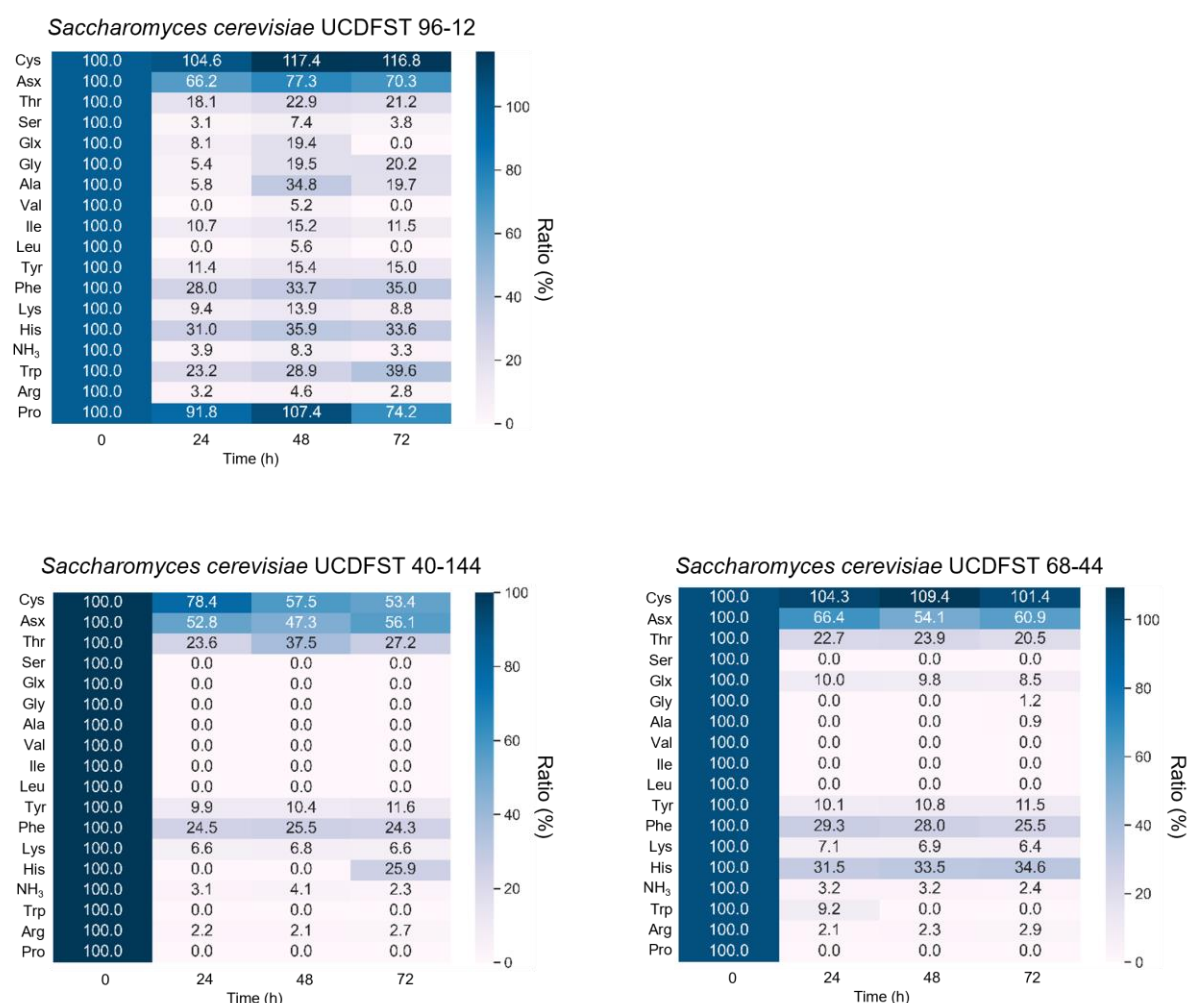


Fig. S1. Consumption profile of all amino acids. *S. cerevisiae* UCDFST 96-12, 40-144, or 68-44 were inoculated into 10 °P wort starting with an OD₆₀₀ of 0.1 per °P. The residual amino acids content was determined at 72 h by the amino acid analyzer. Data are presented as means (n = 3). Asx; Asp and Asn, Glx; Glu and Gln.

Table S1. List of strains used in this research

Name	Geographic origin	Isolate from	Relation: Beer or Wine
<i>Saccharomyces cerevisiae</i> UCDFST 96-12		American ale yeast	Beer (Control)
<i>Lachancea thermotolerans</i> UCDFST 04-833	Wolfskill Experimental Orchard, near Winters, California, USA	Bactrocoera oleae (olive fruit fly) adult male	n/a (Control)
<i>Milleriomyces farinosus</i> UCDFST 75-61	Poland	Japan beer	Beer
<i>Metchnikowia zukaensis</i> UCDFST 92-68	Hweishi Forest, Taiwan	Flowers of <i>Aleurites montana</i>	Beer
<i>Metchnikowia zukaensis</i> UCDFST 92-72	Hweishi Forest, Taiwan	Flowers of <i>Aleurites montana</i>	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 76-171	San Francisco, California, USA	Isolated from ale starter 12/76, Anchor Steam Beer.	Beer
<i>Rhodotorula glutinis</i> UCDFST 92-74	Hweishi Forest, Taiwan	Flowers of <i>Aleurites montana</i>	Beer
<i>Metchnikowia aff. laurientis</i> UCDFST 92-75	Hweishi Forest, Taiwan	Mainly flowers. Tree exudate of <i>Aleurites montana</i>	Beer
<i>Wickerhamomyces anomalus</i> UCDFST 96-160	Davis, California, USA	Bottled beer	Beer
<i>Pichia occidentalis</i> UCDFST 09-1244	Java, Indonesia	Tea-beer fungus	Beer
<i>Wickerhamiella narvagensis</i> UCDFST 65-14	San Francisco, California, USA	Isolated from keg beer, Lucky Lager Co. San Francisco.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-29	Seattle, Washington, USA	Ale yeast	Beer
<i>Metchnikowia aff. zukaensis</i> UCDFST 92-76	Hweishi Forest, Taiwan	Usual in flowers. Tree exudate of <i>Aleurites montana</i>	Beer
<i>Wickerhamiella spandovensis</i> UCDFST 80-34	Germany	German Pilsener beer via Windisch	Beer
<i>Milleriomyces farinosus</i> UCDFST 08-210	Danzig, Poland	Japan beer	Beer
<i>Rhodotorula mucilaginosa</i> UCDFST 68-302	Bremen, Germany	Isolated from pasteurized beer.	Beer
<i>Kazachstanella humilis</i> UCDFST 80-36	South Africa	Isolated from Bantu beer in South Africa.	Beer
<i>Trigonopsis variabilis</i> UCDFST 75-19	Germany	Isolated from beer	Beer
<i>Nagashiiella allidis</i> UCDFST 92-88	Hweishi Forest, Taiwan	Tree exudate of <i>Aleurites montana</i>	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 40-267	USA	Ale yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 40-265	USA	Ale yeast	Beer
<i>Kluyveromyces marxianus</i> UCDFST 77-73	South Africa	Bantu beer by v.d. Walt	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 84-16	UK	Ale yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 76-172	Anchor Steam Beer, San Francisco, California, USA	Isolated from ale starter 12/76	Beer
<i>Kluyveromyces marxianus</i> UCDFST 71-15	South Africa	Isolated from bantu beer in South Africa.	Beer
<i>Magnusiomyces ingens</i> UCDFST 92-89	Hweishi Forest, Taiwan	Tree exudate of <i>Aleurites montana</i>	Beer
<i>Pichia exigua</i> UCDFST 65-13	San Francisco, California, USA	Isolated from keg beer, Lucky Lager Co. San Francisco.	Beer
<i>Saccharomyces sp.</i> UCDFST 96-46	Unknown	Burton Ale Yeast.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 84-13	UK	Ale yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-32	Hoyland, California, USA	Ale yeast	Beer
<i>Saccharomyces uvarum</i> UCDFST 04-316	Japan	BR, Spoiled beer	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-33	Unknown	Wheat beer yeast, commercial strain	Beer
<i>Dekkera bruxellensis</i> UCDFST 82-24	Georgia, Atlanta, USA	Isolated from dry ginger ale. Obtained from D. Aborn.	Beer
<i>Kluyveromyces marxianus</i> UCDFST 77-75	South Africa	Bantu beer	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 12-105	Unknown	British Ale Yeast, WLP005	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 82-16	Thousand Oaks, California, USA	Lager beer yeast obtained from Thousand Oaks Brewery.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 57-5	England	Isolated from super-attenuated beer	Beer
<i>Saccharomyces uvarum</i> or <i>natorum</i> UCDFST 96-36	California, USA	Lager strain; isolated by B.M. Brown (1951); Whitebread strain; Burton Ale Yeast;	Beer
<i>Saccharomyces pastorianus</i> UCDFST 96-19	USA	American Lager Y east	Beer
<i>Dekkera bruxellensis</i> UCDFST 71-11	Unknown	Isolated from a bottle of spoiled beer.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-10	Germany	German Ale Yeast (prob. cerevisiae).	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 05-111	Kalamazoo, Michigan USA	Oberson Ale Yeast (wheat ale)	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 77-65	Sonoma, California, USA	Ale yeast	Beer
<i>Dekkera bruxellensis</i> UCDFST 71-10	Unknown	Isolated from a bottle of spoiled beer.	Beer
<i>Pichia kluyveri</i> UCDFST 96-35	Unknown	*Ale Strain; isolated by B.M. Brown (1951); Whitebread strain, MUCCL 30938,*	Beer
<i>Dekkera bruxellensis</i> UCDFST 71-9	Unknown	Isolated from a keg of spoiled beer.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 40-420	Copenhagen, Denmark	alc; brewery top yeast originally from Kenes Broyghus in Copenhagen.	Beer
<i>Saccharomyces bayanus</i> UCDFST 01-135	Italy	Isolated from turbid beer	Beer
<i>Saccharomyces bayanus</i> UCDFST 96-37	England	Lager strain.	Beer
<i>Dekkera bruxellensis</i> UCDFST 82-23	South Africa	Isolated from tea-beer in South Africa by J.P. van der Walt.	Beer
<i>Saccharomyces pastorianus</i> UCDFST 96-18	Unknown	Pilsen Lager Yeast	Beer
<i>Saccharomyces pastorianus</i> UCDFST 96-27	Unknown	Bohemian Lager Yeast	Beer
<i>Saccharomyces aff. cerevisiae</i> UCDFST 05-115	New Belgium Trippel Ale, Ft Collins, Colorado, USA	New Belgium Trippel Ale, Ft Collins, Colorado.	Beer
<i>Saccharomyces pastorianus</i> UCDFST 96-21	California, USA	California Lager Yeast	Beer
<i>Dekkera bruxellensis</i> UCDFST 71-8	Unknown	Isolated from a bottle of spoiled beer.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 11-543	Unknown	Brewing yeast, lager type, Augustiner Type	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 02-101	Ukiah, California, USA	Blue Heron Pale ale, sediment at bottom of bottle	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-16	Scotland	Scottish Ale Yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-20	Denmark	Danish Lager Yeast	Beer
<i>Saccharomyces cerevisiae var. diastasicus</i> UCDFST 96-15	Europe	European Ale Yeast.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-159	Stockton, California, USA	Barkley wine beer	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 71-141	Unknown	Isolated from Guinness Stout beer in Ireland; via Dr. Ballou at UCB 10/71.(different isolate from 71-140)	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-27	Victoria, British Columbia, Canada	Ale yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 82-605	Unknown	Teguino ("beer" made from corn)	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 08-238	Saint Louis, Missouri, USA	Ale yeast strain 1044, primarily used for ales at Anheuser Busch. Strain also called "Bad American Ale".	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-28	Victoria, British Columbia, Canada	Ale yeast	Beer
<i>Saccharomyces sp.</i> UCDFST 96-45	Unknown	Anchor Ale Yeast.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 40-268	USA	Ale yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-156	Stockton, California, USA	Red beer yeast slurry	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 82-152	Unknown	Lager beer yeast obtained from Maynard Diamond.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-34	Belgium	Belgian White Beer Yeast.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-13	Ireland	Irish Ale Yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 15-388	Missouri, USA	Isolated from beer	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 40-264	USA	Ale yeast	Beer
<i>Saccharomyces pastorianus</i> UCDFST 04-321	Copenhagen, Denmark	Beer, Brewer's yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-11	London, England	London Ale Yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 57-47	Azusa, California, USA	Lucky Lager brewing strain	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 94-52	Unknown	Lager yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 69-52	Norfolk, UK	brewing yeast, ale. Used commercially in APV tower fermenters.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-30	Portland, Oregon, USA	Ale yeast	Beer
<i>Hanseniaspora uvarum</i> UCDFST 68-28	Hungary	From beer (H. de Graaf)	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 82-152 S8	Unknown	Lager beer yeast obtained from Maynard Diamond.	Beer
<i>Saccharomyces sp.</i> UCDFST 96-44	Unknown	Anchor Lager Yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-14	England	British Ale Yeast.	Beer
<i>Saccharomyces pastorianus</i> UCDFST 96-25	Unknown	Munich Lager Yeast.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 96-17	London, England	Special London Ale Yeast.	Beer
<i>Brettanomyces bruxellensis</i> UCDFST 04-212	Brussels, Belgium	Lambic beer	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 15-380	West Africa	Isolated from beer	Beer
<i>Candida pinii</i> UCDFST 51-27	Sweden	Isolated from heartwood of live pines ; by Lagerberg	Beer
<i>Saccharomyces pastorianus</i> UCDFST 96-23	Unknown	Bavarian Lager Yeast	Beer
<i>Saccharomyces sp.</i> UCDFST 96-38	Unknown	Ale Strain.	Beer
<i>Saccharomyces</i> UCDFST 96-47	Unknown	St Stan's Ale Yeast.	Beer
<i>Dekkera bruxellensis</i> UCDFST 71-12	Unknown	Isolated from a bottle of spoiled beer	Beer
<i>Candida sake</i> UCDFST 67-43	Belgium	Isolated by H. Kufferath from lambic beer, Belgium.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 82-152 Matte	Unknown	Lager beer yeast obtained from Maynard Diamond.	Beer
<i>Torulaspora delbrueckii</i> UCDFST 69-34	Unknown	From spoiled ale.	Beer
<i>Wickerhamiella nanus</i> UCDFST 80-82	Germany	Isolated from German Pilsener beer by W. Henniger	Beer
<i>Candida meyeriana</i> UCDFST 59-22	Lucky Lager Brewery, San Francisco, California, USA	Isolated from fermenting beer wort	Beer
<i>Candida meyeriana</i> UCDFST 67-37	Holland	Isolated from beer conduit tubes. Holland, by R. Vermeulen.	Beer
<i>Magnusiomyces ingens</i> UCDFST 92-90	Hweishi Forest, Taiwan	Tree exudate of <i>Aleurites montana</i>	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 85-31	Portland, Oregon, USA	Ale yeast	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 57-48	Azusa, California, USA	Lucky Lager brewing strain	Beer
<i>Diatina catenulata</i> UCDFST 59-20	Lucky Lager Brewery, San Francisco, California, USA	Isolated from fermenting beer wort	Beer
<i>Candida meyeriana</i> UCDFST 09-1245	Germany	Beer pipes in brewery	Beer
<i>Brettanomyces nanus</i> UCDFST 13-104	Kalmars, Sweden	Bottled beer	Beer
<i>Saccharomyces sp.</i> UCDFST 08-239	Saint Louis, Missouri, USA	Strain W205, a hefeweizen strain. "W" may stand for "Wenhenstephan", at the University of Munich, brewing program. Used at Anheuser Busch to make wheat beers.	Beer
<i>Candida meyeriana</i> UCDFST 67-35	Germany	Isolated from beer conduit tubes, Germany by H. schnepp.	Beer
<i>Cystofoliasium infirmum</i> UCDFST 68-193	Stockholm, Sweden	Isolated from a beer bottle washer.	Beer
<i>Saccharomyces cerevisiae</i> UCDFST 11-186	South Africa	Wine	Wine
<i>Kluyveromyces fragilis var. fragilis</i> UCDFST 40-148	Frei Bros. winery, California, USA	Naturally fermenting vat of wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 70-4	South Africa	Isolated in South Africa from winery equipment by v.d. Walt.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-144	Unknown	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-262	State of San Paulo, Brazil	Rosati Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-359	South Africa	Isolated from wine	Wine
<i>Metchnikowia pulcherrima</i> UCDFST 04-201	Unknown	Isolated from barrel fermentation (wine?)	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-74	California, USA	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-172	Unknown	Sherry wine strain.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 68-44	France	Montrachet, Enjolras strain.	Wine
<i>Pastionella laurentii</i> UCDFST 68-201	Belgian Congo	Isolated from "malfoir" (palm wine).	Wine
<i>Metchnikowia chrysoperlae</i> UCDFST 04-203	USA, California, Napa	Isolated from barrel fermentation (wine?)	Wine
<i>Pastionella laurentii</i> UCDFST 09-1247	Congo	Palm wine	Wine
<i>Candida mellissae</i> UCDFST 80-25	Japan	Isolated from wine in Japan by Goto.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-51	France	Burgundy wine yeast	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-367	Japan	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-386	Africa	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 86-9	Probably Germany	Giesenheim wine strain	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-374	France	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-175	Unknown	Zinfandel wine strains.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 04-317	Switzerland	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-505	France	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-393	Unknown	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-357	Italy	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-195	Japan	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 61-22	Ivory Coast, South Africa	Isolated from palm wine Type strain of <i>Saccharomyces chevalieri</i> .	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-102	Unknown	Commercial wine strain K-1, UCD VE # 960. Obtained by VE from Scott Lals, Lalvin, 1993.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-302	Nigeria	Isolated from	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 79-296	Unknown	Wine yeast "Assmanns haussen" obtained from wine consultant I. Wara	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 74-42	USA, California	Isolated in Pfaff's lab from a sample of Chateau Blanc wine from Chappellet Vineyards as a majority isolates. 6-74.	Wine
<i>Pichia membrifaciens</i> UCDFST 78-73	Unknown	Isolated by Paulette from bottled wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-168	Unknown, possibly Spain	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-180	Unknown	Riesling Wine strain	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-109	Nigeria	Commercial wine strain Montrachet	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-402	Unknown	Isolated from wine	Wine
<i>Pichia membrifaciens</i> UCDFST 78-74	Unknown	Isolated by Paulette from bottled wine	Wine
<i>Pichia membrifaciens</i> UCDFST 78-72	Unknown	Isolated by Paulette from bottled wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-356	Italy	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 75-12	Spain	Wine strain Flor, University Food Corp.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-260	Marinac, California, USA	Di Gardi Sweet wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-106	USA, California	Commercial wine strain Premier Cuvee, Red Star, UCD VE # 905.	Wine
<i>Saccharomyces bayanus</i> UCDFST 74-43	Unknown	Isolated in Dr. Pfaff's lab from a sample of Riesling wine from Chappellet Vineyards as the only occurring yeast. 6-74.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-405	Slovenia	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-104	Unknown	Commercial wine strain 71 B, UCD VE # 959.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-101	Unknown	Commercial wine strain Souche, KCV D47, UCD VE # 963. Obtained by VE from Vinquay, Enfermer, 1993.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 79-297	Unknown	Wine yeast "Chamagne" obtained from wine consultant L. Wara	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-345	Africa	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-112	France, Bouzy	Wine strain Bouzy	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 96-153	Stockton, California, USA	Barkley wine yeast slurry	Wine
<i>Tetrahena delbrueckii</i> UCDFST 13-115	Chateau Lachey-Halde, Bordeaux, France	Grape wine (Merlot), 2007	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-213	Minas Gerais, Brazil	Strain "Rimac" isolated from Rimac Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 81-292	Unknown	Chamagne wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 79-298	Probably Germany	Wine yeast "Trochobren anskonen"	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-181	Unknown	Winnigen Wine strain	Wine
<i>Tamulasma meycana</i> UCDFST 69-32	Italy	Isolated in Italy from wine must by Florenzano in 1953.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-176	California, USA	Wine	Wine
<i>Saccharomyces sp.</i> UCDFST 96-28	Unknown	Red Wine Yeast, Wyeast#3028	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-146	Champagne, France	Wine strain Champagne Ay C.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-176	Unknown	Waldenburg wine strain.	Wine

<i>Schizosaccharomyces japonicus</i> UCDFST 71-26	Japan	Strawberry wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-169	Unknown	Stenberg wine strain.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-105	Unknown	Commercial wine strain M2, UCD VE # 906.	Wine
<i>Starmerella bacillaris</i> UCDFST 07-106	Bordeaux, France	Wine fermentation	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-133	Unknown	Simi white (wine?) strain	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-87	France, Sauterne	Sauterne wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 96-155	Stockton, California, USA	Barley wine yeast slurry	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-167	Unknown, possibly Germany	Geisenheim Wine Strain.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-132	France	Wine strain Prise de Mousse Champagne, Pasteur Institute	Wine
<i>Taralozpora dellavacchi</i> UCDFST 13-114	Bordeaux, France	Grape wine (Merlot), 2007.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-100		Commercial wine strain Cote des Blancs, UCD VE # 2031.	Wine
<i>Saccharomyces bayanus</i> UCDFST 75-43	California, USA	Isolated from commercial Zinfandel wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-44	Unknown	Champagne wine yeast.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-125	Nigeria	Palm wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-182	Italy	Wine	Wine
<i>Starmerella bacillaris</i> UCDFST 06-143	Napa, California, USA	Sweet wine fermentation (Dolce), semillon grape juice	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-103	Italy	Unknown	Wine
<i>Saccharomyces bayanus</i> UCDFST 11-130	Tinukari, North Kolaka, Sulawesi, Indonesia	Tree on trail. Scarab larva 017. Gut dissection.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 74-44	Chappellet Vineyards, California, USA	Isolated in Dr. Phaff's lab from Chenn Blanc wine as minority organism, 6/74	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-305	Slovenia	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-307	Europe	Isolated from wine.	Wine
<i>Debarya brachyellensis</i> UCDFST 77-5	Unknown	Unknown	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-177	Europe	European winery, Bordeaux wine strain.	Wine
<i>Greenevalleyomyia turritiformis</i> UCDFST 12-178	Torres Vedras, Roma, Portugal	Dried lees of wine	Wine
<i>Saccharomyces bayanus</i> UCDFST 11-129	North Carolina, USA	Wine	Wine
<i>Pisibaculum capituligenum</i> UCDFST 68-248	South Africa	Isolated from wine cellar material v.d. Walt.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-183	Italy	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-108	Unknown	Commercial wine strain French White	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 15-378	France	Isolated from wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-124	Hungary, Tokaj region	Wine strain Tokaj.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-119	Unknown	Wine strain Muscatel	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 79-45	Spain	Isolated from white wine by J. Santa Maria	Wine
<i>Starmerella bacillaris</i> UCDFST 06-151	Tokaj wine region, Hungary	Botrytized wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 01-107	Unknown	Commercial wine strain Pasteur Champagne, Red Star	Wine
<i>Piscomyces carsoni</i> UCDFST 66-20	Germany	Bottle of spoiled wine	Wine
<i>Debaryomyces hansenii</i> UCDFST 13-117	Bordeaux, France	Grape/wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 11-181	Italy	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 09-111	Unknown	Wine	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 40-178	Unknown	Muscated wine strain.	Wine
<i>Saccharomyces cerevisiae</i> UCDFST 06-152	Tokaj wine region, Hungary	Wine	Wine

Table S2. Number and ratio of strains sorted by genera.

Genus	Number	Ratio (%)
<i>Saccharomyces</i>	142	69.3
<i>Dekkera</i>	8	3.9
<i>Candida</i>	7	3.4
<i>Pichia</i>	6	2.9
<i>Metschnikowia</i>	6	2.9
<i>Kluyveromyces</i>	4	2.0
<i>Wickerhamiella</i>	3	1.5
<i>Torulaspora</i>	3	1.5
<i>Starmerella</i>	3	1.5
<i>Rhodotorula</i>	2	1.0
<i>Papiliotrema</i>	2	1.0
<i>Millerozyma</i>	2	1.0
<i>Magnusiomyces</i>	2	1.0
<i>Brettanomyces</i>	2	1.0
<i>Yamadazyma</i>	1	0.5
<i>Wickerhamomyces</i>	1	0.5
<i>Trigonopsis</i>	1	0.5
<i>Schizosaccharomyces</i>	1	0.5
<i>Priceomyces</i>	1	0.5
<i>Piskurozyma</i>	1	0.5
<i>Naganishia</i>	1	0.5
<i>Kazachstania</i>	1	0.5
<i>Hanseniaspora</i>	1	0.5
<i>Groenewaldozyma</i>	1	0.5
<i>Diutina</i>	1	0.5
<i>Debaryomyces</i>	1	0.5
<i>Cystofilobasidium</i>	1	0.5
Total	205	100.0

Table S3. Number of strains in selected genera before and after screenings.

Genus	Number of strains		Ratio (%)
	Subjected	Obtained	
<i>Saccharomyces</i>	142	11	7.7
<i>Candida</i>	7	1	14.3
<i>Metschnikowia</i>	6	6	100.0
<i>Pichia</i>	6	1	16.7
<i>Kluyveromyces</i>	4	2	50.0
<i>Wickerhamiella</i>	3	2	66.7
<i>Millerozyma</i>	2	2	100.0
<i>Papiliotrema</i>	2	2	100.0
<i>Rhodotorula</i>	2	2	100.0
<i>Kazachstania</i>	1	1	100.0
<i>Wickerhamomyces</i>	1	1	100.0