

Table S1: Yeast isolates of each species and place of isolation.

Species	Number of isolates	Isolation
<i>Torulaspora delbrueckii</i>	18	AF, facilities
<i>Metschnikowia pulcherrima</i>	16	AF, facilities
<i>Lachancea thermotolerans</i>	16	AF
<i>Pichia kluyveri</i>	4	Vineyard, AF
<i>Candida</i> spp.*	12	AF, facilities, air
<i>Zygosaccharomyces bailii</i>	7	AF
<i>Issatchenkia orientalis</i>	1	AF
<i>Williopsis pratensis</i>	10	Air
<i>Cryptococcus</i> spp.*	5	Air
<i>Debaryomyces hansenii</i>	3	Air, facilities
<i>Sporidiobolus salmonicolor</i>	6	Air

*Different species. AF: Alcoholic Fermentation

Table S2: Percentage (%) of strains growing at the same level as control at 48 hours after inoculation, with different dosages of SO₂.

Non-Saccharomyces species	Dosage of SO ₂ (mg/L)			
	20	40	80	120
<i>Torulaspora delbrueckii</i>	100	100	67	14
<i>Metschnikowia pulcherrima</i>	100	57	0	0
<i>Lachancea thermotolerans</i>	100	19	6	0
<i>Zygosaccharomyces bailii</i>	100	100	33	16
<i>Williopsis pratensis</i>	100	70	0	0

Table S3: Maximum level of SO₂ which allowed a similar growth to control at 24 hours and enzymatic activities of the twenty-four strains selected for the vinification trials.

Strains	SO ₂ resistance (mg/l)	Esterase	Esterase- lipase	Lipase	LeucineA	ValineA	CystineA	β- glucosidase	Pectinase	Cellulase	Xylanase	Glucanase
<i>Z. bailii</i> 71	20	+	-	-	+	-	-	-	+	+	-	-
<i>L. thermotolerans</i> 47	20	+	+	-	+	+	-	-	-	+	+	+
<i>L. thermotolerans</i> 53	20	+	+	+	+	+	-	-	-	+	+	+
<i>L. thermotolerans</i> 54	20	+	+	+	+	+	-	+	-	-	-	-
<i>L. thermotolerans</i> 57	20	+	+	-	+	+	+	-	+	+	+	+
<i>T. delbrueckii</i> 13	40	+	+	-	+	-	-	-	+	-	-	-
<i>T. delbrueckii</i> 17	80	+	+	-	+	-	-	-	+	-	-	-
<i>T. delbrueckii</i> 18	80	+	+	-	+	-	-	-	+	+	-	-
<i>T. delbrueckii</i> 19	40	+	+	-	+	-	+	-	+	-	-	-
<i>M. pulcherrima</i> 23	20	+	+	-	+	-	-	-	+	-	-	+
<i>M. pulcherrima</i> 25	20	+	+	-	-	-	-	-	+	+	-	-
<i>M. pulcherrima</i> 28	20	+	+	-	+	-	-	+	+	+	-	-
<i>M. pulcherrima</i> 29	20	+	+	-	+	+	-	+	+	-	-	-
<i>M. pulcherrima</i> 36	20	+	+	-	+	-	-	+	-	-	-	-
<i>C. zeylanoides</i> 342	20	+	+	-	+	+	-	-	+	-	-	-
<i>C. zeylanoides</i> 514	20	+	+	-	+	+	-	+	-	-	-	-
<i>C. zeylanoides</i> 115	20	-	+	-	+	+	-	+	-	-	-	-
<i>W. pratensis</i> 79	20	+	+	-	+	+	+	-	-	-	-	-
<i>W. pratensis</i> 84	20	+	+	-	+	+	+	-	-	-	-	-
<i>W. pratensis</i> 86	20	+	+	-	+	+	+	-	-	-	-	-
<i>W. pratensis</i> 87	40	+	+	-	+	+	+	-	-	-	-	-
<i>W. pratensis</i> 88	20	+	+	-	+	+	+	-	-	-	-	-
<i>Cr. uzbekistanensis</i>	0	+	+	-	+	-	-	+	+	-	-	-
<i>D. hansenii</i> 96	40	+	+	-	-	-	-	-	+	+	-	+

Table S4: Average enological traits of wines (with significant differences) fermented by different *Lachancea thermotolerans* (Lt) strains and statistical analysis.

Parameters	Strains			
	<i>Lt 47</i>	<i>Lt 53</i>	<i>Lt 54</i>	<i>Lt 57</i>
pH	3.29 b	3.26 ab	3.19 a	3.33 b
Total acidity	4.70 a	5.70 b	6.45 b	4.15 a
Lactic acid	1.90 a	3.80 b	4.20 b	0.90 a
Piruvic acid	20.0 a	21.0 b	28.5 b	26.0 ab
Succinic acid	287 a	384 ab	372 ab	438 b
Volatile acidity	0.17 a	0.26 b	0.28 b	0.14 a

Different letters mean significant differences between genotypes (p<0.05)

Table S5: Analytical parameters with significant differences produced by different non-*Saccharomyces* yeasts at the end of alcoholic fermentation.

Parameters	Yeasts species and strains											
	T18	T19	M28	M29	L54	L57	LT1	LT2	Z71	W87	C342	SVRB
Alcohol strength (%)	14.1	14.2	14.2	14.1	14.0	14.1	14.2	14.2	14.3	14.3	14.3	14.3
Volatile acidity (g/L)	0.09 a	0.09 a	0.11 a	0.12 a	0.22 b	0.16 ab	0.13 a	0.14 a	0.12 a	0.14 a	0.11 a	0.16 ab
Malic acid (g/L)	2.15 e	2.15 e	1.95 cde	1.79 bcd	1.71 abc	2.04 de	2.18 d	1.95 cde	1.62 ab	1.46 a	1.44 a	2.46 f
Glycerol (g/L)	8.90 d	8.60 cd	8.35 bcd	8.20 bcd	7.75 ab	7.70 ab	8.15 bc	8.30 bcd	7.80 ab	8.00 abc	7.85 ab	7.55 a
Ethanal (mg/L)	22.5 bc	25.0 c	10.5 a	13.5 a	35.0 d	29.0 cd	25.5 c	22.5 c	23.0 c	14.0 ab	14.5 ab	11.0 a