

Table S1 List of yeast strains generated and used in this study

ID ¹	Strain Name	Parental background	Genotype	Ploidy	Mating partners (for diploids)	Source/Reference
Parental strains (used for genome sequencing, crosses and/or strain construction)						
<i>Saccharomyces ludwigii</i>						
Sc-9750	NBRC 1721 ²		wild-type isolate (origin: Japan)	diploid		[37]
Sc-9752/9753	NBRC 1722 ³		<i>MATa</i> , meiotic descendant of wild-type isolate NBRC 1721	haploid		[35]
Sc-9754	NBRC 1723 ⁴		<i>MATa</i> , meiotic descendant of wild-type isolate NBRC 1721	haploid		[35]
Sdl-75	CBS 5929 ⁵		wild-type isolate (origin: South Africa)	diploid		
Strains used for functional analyses of meiotic genes						
Sdl-206	YLFP10-1	Sc-9753	<i>MATa Δura3::hphNT1</i>	haploid		this study
Sdl-307	YLFP15-1	Sdl-206	<i>Δmata::URA3-kanMX4 Δura3::hphNT1</i>	haploid		this study
Sdl-334	YLFP16-5	Sdl-307	<i>MATa Δura3::hphNT1</i>	haploid		this study
Sdl-339	YLFP18-1	Sdl-334	<i>MATa</i> (isogenic to NBRC 1722)	haploid		this study
Sdl-336	YLFP17-1		<i>MATa/MATa URA3/Δura3::hphNT1</i>	diploid	Sc-9753 x Sdl-334	this study
Sdl-502	YLFP17-4		<i>MATa/MATa</i>	diploid	Sc-9753 x Sdl-339	this study
Sdl-452	YLFP37-1	Sdl-339	<i>MATa Δspo11::kanMX4</i>	haploid		this study
Sdl-361	YLFP23-1	Sc-9753	<i>MATa Δspo11::hphNT1</i>	haploid		this study
Sdl-539	YLFP58-1		<i>MATa/MATa Δspo11::kanMX4/Δspo11::hphNT1</i>	diploid	Sdl-452 x Sdl-361	this study
Sdl-878	YLFP157-1	Sc-9753	<i>MATa Δrad51::kanMX4</i>	haploid		this study
Sdl-882	YLFP158-1	Sdl-339	<i>MATa Δrad51::kanMX4</i>	haploid		this study
Sdl-886	YLFP159-1		<i>MATa/MATa Δrad51::kanMX4/Δrad51::kanMX4</i>	diploid	Sdl-878 x Sdl-882	this study
Sdl-926	YLFP174-1	Sc-9753	<i>MATa Δdmc1::kanMX4</i>	haploid		this study
Sdl-930	YLFP175-1	Sdl-339	<i>MATa Δdmc1::kanMX4</i>	haploid		this study
Sdl-958	YLFP182-1		<i>MATa/MATa Δdmc1::kanMX4/Δdmc1::kanMX4</i>	diploid	Sdl-926 x Sdl-930	this study
Sdl-728	YLFP99-1	Sc-9753	<i>MATa RAP1-GFP-kanMX6</i>	haploid		this study
Sdl-736	YLFP101-1	Sdl-339	<i>MATa RAP1-GFP-kanMX6</i>	haploid		this study
Sdl-764	YLFP108-1		<i>MATa/MATa RAP1-GFP-kanMX6/RAP1-GFP-kanMX6</i>	diploid	Sdl-728 x Sdl-736	this study

Strains used for meiotic segregation analyses

Sdl-100	YLNH55			<i>MATα</i> , meiotic descendant of wild-type isolate Sdl-75	haploid		this study
Sdl-102	YLNH57			<i>MATα</i> , meiotic descendant of wild-type isolate Sdl-75	haploid		this study
Sdl-122	YLNH75			<i>MATα</i> , meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-982	YLFP188-1			<i>MATα/MATα</i>	diploid	Sdl-9752 x Sdl-122	this study
Tetrad Sdl-113 - Sdl-116							
Sdl-113	YLNH66	}	first	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-114	YLNH67		dyad	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-115	YLNH68	}	second	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-116	YLNH69		dyad	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Tetrad Sdl-117 - Sdl-120							
Sdl-117	YLNH70	}	first	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-118	YLNH71		dyad	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-119	YLNH72	}	second	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Sdl-120	YLNH73		dyad	meiotic descendant of cross Sdl-100 x Sdl-102	haploid		this study
Tetrad Sdl-280 - Sdl-283							
Sdl-280	YLNH198	}	first	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-281	YLNH199		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-282	YLNH200	}	second	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-283	YLNH201		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Tetrad Sdl-284 - Sdl-287							
Sdl-284	YLNH202	}	first	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-285	YLNH203		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-286	YLNH204	}	second	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-287	YLNH205		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Tetrad Sdl-985 - Sdl-988							
Sdl-985	YLFP189-1	}	first	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study
Sdl-986	YLFP189-2		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid		this study

Sdl-987	YLFP189-3	}	second	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-988	YLFP189-4		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Tetrad Sdl-989 - Sdl-992						
Sdl-989	YLFP190-1	}	first	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-990	YLFP190-2		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-991	YLFP190-3	}	second	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-992	YLFP190-4		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Tetrad Sdl-1233 - Sdl-1239						
Sdl-1233	YLIP2-1	}	first	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-1235	YLIP3-1		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-1237	YLIP4-1	}	second	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Sdl-1239	YLIP5-1		dyad	meiotic descendant of cross Sc-9752 x Sdl-122	haploid	this study
Additional strains used for population comparisons/analyses						
Sdl-58	CBS 1168			wild-type isolate	haploid	
Sdl-1211	BJK_5C			wild-type isolate (origin: Slovenia)	diploid	[38]
Sc-9673	NCYC 732			wild-type isolate (origin: Italy)	diploid	
Sc-9676	NCYC 734			wild-type isolate (origin: UK)	diploid	
Sc-9679	NCYC 849			wild-type isolate (origin: UK)	diploid	
Sc-9682	NCYC 3345			wild-type isolate	aneuploid (2n+1)	
Sc-9790	DSM 70550			wild-type isolate (origin: France)	aneuploid (2n+1)	
Sdl-1267	PC99 R 1			meiotic descendant of wild-type isolate PC99/R (origin: Italy)	haploid	[39]

¹ Database ID numbers of yeast strains correspond to their permanent identifiers in the Knop lab yeast strain collections.

² Wild-type diploid isolate from grape must in Japan; isolated in 1964; alternative strain identifiers: IFO 1721, DSM 3447, O-81.

³ Single-spore meiotic descendant of wild-type diploid isolate NBRC 1721; alternative strain identifiers: ATCC 26617, DSM 3448, IFO 1722, IIA₁₁S1.

⁴ Single-spore meiotic descendant of wild-type diploid isolate NBRC 1721; alternative strain identifiers: ATCC 26618, DSM 3449, IFO 1723, IIA₁₁S2.

⁵ Wild-type diploid isolate from garden soil in Pretoria (South Africa); isolated in 1953.