

Strain List				
name	genotype	plasmid	figures	reference
BY4741	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0			(Brachmann, Davies et al., 1998)
TP2830	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0	pRS313 (Sikorski & Hieter, 1989)	2A, 3C	(Fu, Chow et al., 2014)
TP2012	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX			(Winzeler, Shoemaker et al., 1999)
TP3472	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP1496 (wild-type Flag-SAE2 in pRS313)	2A, 3C	(Fu et al., 2014)
TP7572	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3683 (L58P/A59P Flag-SAE2 in pRS313)	2A	this study
TP7573	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3684 (I96P Flag-SAE2 in pRS313)	2A	this study
TP7574	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3685 (E161P/K163P Flag-SAE2 in pRS313)	2A, 3C	this study
TP7575	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3700 (D285P/K288P Flag-SAE2 in pRS313)	2A, 3C	this study
TP7576	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3686 (I292/ I293P Flag-SAE2 in pRS313)	2A	this study
TP7785	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3789 (L338P/L339P Flag-SAE2 in pRS313)	2A	this study
TP7786	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3790 (D285P/K288P/I292P/I293P Flag-SAE2 in pRS313)	2A	this study
TP7896	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3870 (E161P/K163P/D285P/K288P Flag-SAE2 in pRS313)	3C	this study
TP3352	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	wild-type Flag-SAE2 in 2μ pRS425 (Kim, Vijayakumar et al., 2008)	2B	(Fu et al., 2014)
TP3540	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pRS425 (Christianson, Sikorski et al., 1992)	2B	(Fu et al., 2014)
TP7610	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3733 (D285P/K288P Flag-SAE2 in 2μ pRS425)	2B	this study
TP7611	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3752 (I292/ I293P Flag-SAE2 in 2μ pRS425)	2B	this study
TP7612	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3753 (D285P/K288P/I292P/I293P Flag-SAE2 in 2μ pRS425)	2B	this study
TP7613	MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sae2::KMX	pTP3734 (L338P/L339P Flag-SAE2 in 2μ pRS425)	2B	this study
JLC501/ TP6444	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1		2C	(Budd & Campbell, 1995)
JLC502/ TP6445	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1 sae2::KMX		2C	this study
JLC503	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 sae2::KMX		2C	this study
TP7798	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1	pRS313 (Sikorski & Hieter, 1989)	2D	this study
TP7799	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1 sae2::KMX	pRS313 (Sikorski & Hieter, 1989)	2D	this study
TP7800	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1 sae2::KMX	pTP1496 (wild-type Flag-SAE2 in pRS313)	2D	this study
TP7801	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1 sae2::KMX	pTP3683 (L58P/A59P Flag-SAE2 in pRS313)	2D	this study
TP7802	MATa his3Δ1 leu2Δ0 lys2Δ0 ura3Δ0 dna2-1 sae2::KMX	pTP3684 (I96P Flag-SAE2 in pRS313)	2D	this study

TP7803	MAT α his3 Δ 1 leu2 Δ 0 lys2 Δ 0 ura3 Δ 0 dna2-1 sae2::KMX	pTP3685 (E161P/K163P Flag-SAE2 in pRS313)	2D	this study
TP7804	MAT α his3 Δ 1 leu2 Δ 0 lys2 Δ 0 ura3 Δ 0 dna2-1 sae2::KMX	pTP3700 (D285P/K288P Flag-SAE2 in pRS313)	2D	this study
TP6553	mre11-125 pif1::HIS3 bar1::KanMX dna2::KanMX		2E	(Budd & Campbell, 2009)
TP6448	MAT α his3 Δ 1 leu2 Δ 0 met15 Δ 0 ura3 Δ 0 dna2::KanMX pif1::HIS3		2E	(Budd & Campbell, 2009)
TP6450	MAT α his3 Δ 1 leu2 Δ 0 met15 Δ 0 ura3 Δ 0 mre11::natR pif1::HIS3 bar1::KanMX		2E	(Budd & Campbell, 2009)
TP6446	MAT α his3 Δ 1 leu2 Δ 0 met15 Δ 0 ura3 Δ 0 pif1::HIS3		2E	(Budd & Campbell, 2009)
LSY1397	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N		3A	(Krogh, Llorente et al., 2005)
TP7769	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N	pRS313 (Sikorski & Hieter, 1989)	3A	this study
TP7770	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2::URA3	pRS313 (Sikorski & Hieter, 1989)	3A	this study
TP7771	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2::URA3	pTP1496 (wild-type Flag-SAE2 in pRS313)	3A	this study
TP7772	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2::URA3	pTP3683 (L58P/A59P Flag-SAE2 in pRS313)	3A	this study
TP7773	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2::URA3	pTP3684 (I96P Flag-SAE2 in pRS313)	3A	this study
TP7774	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2::URA3	pTP3685 (E161P/K163P Flag-SAE2 in pRS313)	3A	this study
TP7775	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2::URA3	pTP3700 (D285P/K288P Flag-SAE2 in pRS313)	3A	this study
TP7852	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pRS425 (Christianson et al., 1992)	3B	this study
TP7853	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	wild-type Flag-SAE2 in 2 μ pRS425 (Kim et al., 2008)	3B	this study
TP7986	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pTP3733 (D285P/K288P Flag-SAE2 in 2 μ pRS425)	3B	this study
TP7855	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pTP3851 (E161P/K163P Flag-SAE2 in 2 μ pRS425)	3B	this study
LSY0678	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1		3D	L. Symington
LSY1397	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N		3D	L. Symington
TP7692	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3		3D	this study
TP8052	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2-D285P/K288P		3D	this study
TP7966	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2-E161P/K163P		3D	this study
TP8522	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2-E161P/K163P		3D	this study
TP8395	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 mre11-H125N sae2-D285P/K288P		3D	this study
TP8416	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Ku70::KanMX sae2::URA3	pRS423 (Christianson et al., 1992)	3F	this study
TP8417	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Ku70::KanMX sae2::URA3	pTP1496 (wild-type Flag-SAE2 in pRS313)	3F	this study
TP8418	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Ku70::KanMX sae2::URA3	pTP3685 (E161P/K163P Flag-SAE2 in pRS313)	3F	this study
TP8419	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Ku70::KanMX sae2::URA3	pTP3700 (D285P/K288P Flag-SAE2 in pRS313)	3F	this study
TP8420	MAT α RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Ku70::KanMX sae2::URA3	pTP3870 (E161P/K163P/D285P/K288P Flag-SAE2 in pRS313)	3F	this study

TP7983	MATa RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pRS313 (Sikorski & Hieter, 1989)	3F	this study
JKM179	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO			(Lee, Moore et al., 1998)
TP5927	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO	pRS425 (Christianson et al., 1992)	7A	this study
TP5157	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX			this study
TP5928	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX	pRS425 (Christianson et al., 1992)	6B-D, 7A	this study
TP7701	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX	wild-type Flag- <i>SAE2</i> in 2μ pRS425 (Kim et al., 2008)	6B-D, 7A	this study
TP7696	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX	pTP3733 (D285P/K288P Flag- <i>SAE2</i> in 2μ pRS425)	6B-D, 7A	this study
TP7697	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX	pTP3851 (E161P/K163P Flag- <i>SAE2</i> in 2μ pRS425)	6B-D, 7A	this study
TP7943	MATα Δho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX	pTP3871 (E161P/K163P/D285P/K288P Flag- <i>SAE2</i> in 2μ pRS425)	7A	this study
YMV80	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs			(Vaze, Pellicoli et al., 2002)
TP6028	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs	pRS425 (Christianson et al., 1992)	6E	this study
TP6023	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs sae2::URA3			this study
TP7703	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs sae2::URA3	pRS425 (Christianson et al., 1992)	6E	this study
TP6030	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs sae2::URA3	wild-type Flag- <i>SAE2</i> in 2μ pRS425 (Kim et al., 2008)	6E	this study
TP7695	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs sae2::URA3	pTP3851 (E161P/K163P Flag- <i>SAE2</i> in 2μ pRS425)	6E	this study
TP7694	MAT::hisG hml::ADE1 hmr::ADE1 ade1 lys5 ura3-52 trp1 ho ade3::GAL-HO leu2::cs sae2::URA3	pTP3733 (D285P/K288P Flag- <i>SAE2</i> in 2μ pRS425)	6E	this study
ALE94	MATa ade5-1 his7-2 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR			(Lobachev, Gordenin et al., 2002)
TP2464	MATa ade5-1 his7-2 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX			this study
TP3226	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1			this study
TP7699	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH			this study
TP7872	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316)		this study
TP7892	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pRS313	7B	this study
TP7893	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pTP1496 (wild-type Flag- <i>SAE2</i> in pRS313)	7B	this study
TP7894	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pTP3685 (E161P/K163P Flag- <i>SAE2</i> in pRS313)	7B	this study
TP7895	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pTP3700 (D285P/K288P Flag- <i>SAE2</i> in pRS313)	7B	this study
TP7871	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316)		
TP7888	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pRS313	7B	this study
TP7889	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pTP1496 (wild-type Flag- <i>SAE2</i> in pRS313)	7B	this study
TP7890	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pTP3685 (E161P/K163P Flag- <i>SAE2</i> in pRS313)	7B	this study
TP7891	MATa ade5-1 HIS7 leu2-3,112:: p305L3 (LEU2) trp1-289 ura3-D, lys2::AluIR sae2::KMX his3::TRP1 mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pTP3700 (D285P/K288P Flag- <i>SAE2</i> in pRS313)	7B	this study

TP7850	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH			
TP7945	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pRS425	7C	this study
TP7949	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + wild-type Flag- <i>SAE2</i> in 2 μ pRS425 (Kim et al., 2008)	7C	this study
TP7957	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pTP3851 (E161P/K163P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7953	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pTP3733 (D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7961	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP165 (wild-type <i>MRE11</i> in pRS316) + pTP3871 (E161P/K163P/D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7946	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pRS425	7C	this study
TP7950	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + wild-type Flag- <i>SAE2</i> in 2 μ pRS425 (Kim et al., 2008)	7C	this study
TP7958	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pTP3851 (E161P/K163P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7954	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pTP3733 (D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7962	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP178 (<i>H125N mre11</i> in pRS316) + pTP3871 (E161P/K163P/D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7960	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP3902 (<i>H125N/H37Y mre11</i> in pRS316) + pTP3851 (E161P/K163P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7964	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP3902 (<i>H125N/H37Y mre11</i> in pRS316) + pTP3871 (E161P/K163P/D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
TP7948	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP3902 (<i>H125N/H37Y mre11</i> in pRS316) + pRS425	7C	this study
TP7951	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP3902 (<i>H125N/H37Y mre11</i> in pRS316) + wild-type Flag- <i>SAE2</i> in 2 μ pRS425 (Kim et al., 2008)	7C	this study
TP7947	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP3880 (<i>H37Y mre11</i> in pRS316) + pRS425	7C	this study
TP7963	MAT α Δ ho hml::ADE1 hmr::ADE1 ade1-110 leu2,3-112 lys5 trp1::hisG ura3-52 ade3::GAL10:HO sae2::KMX mre11::HPH	pTP3880 (<i>H37Y mre11</i> in pRS316) + pTP3871 (E161P/K163P/D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)	7C	this study
X2570-12A	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2			Xiaolan Zhao
TP5654	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX			this study
TP5675	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH			this study
TP5702	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH mec1::NAT			this study
TP7973	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH mec1::NAT	pRS313 (Sikorski & Hieter, 1989)	7D	this study
TP7974	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH mec1::NAT	pTP1496 (wild-type Flag- <i>SAE2</i> in pRS313)	7D	this study
TP7975	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH mec1::NAT	pTP3685 (E161P/K163P Flag- <i>SAE2</i> in pRS313)	7D	this study
TP7976	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH mec1::NAT	pTP3700 (D285P/K288P Flag- <i>SAE2</i> in pRS313)	7D	this study
TP7977	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sae2::KMX sml1::HPH mec1::NAT	pTP3870 (E161P/K163P/D285P/K288P Flag- <i>SAE2</i> in pRS313)	7D	this study
TP7978	MATalpha RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 Rad53-Flag::LEU2 sml1::HPH	pRS313 (Sikorski & Hieter, 1989)	7D	this study
TP7852	MATa RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pRS425 (Christianson et al., 1992)		this study
TP7853	MATa RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	wild-type Flag- <i>SAE2</i> in 2 μ pRS425 (Kim et al., 2008)		this study
TP7854	MATa RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pTP3733 (D285P/K288P Flag- <i>SAE2</i> in 2 μ pRS425)		this study

TP7855	MATa RAD5 leu2-3,112 trp1-1 ura3 can1 his3-11,15 ade2-1 sae2::URA3	pTP3851 (E161P/K163P Flag-SAE2 in 2 μ pRS425)		this study
BY4742	MATalpha his3 Δ 1 leu2 Δ 0 lys2 Δ 0 ura3 Δ 0			(Brachmann et al., 1998)
TP2224	MATalpha his3 Δ 1 leu2 Δ 0 lys2 Δ 0 ura3 Δ 0 sae2::KMX			this study
TP7861	diploid from TP2224 and TP7852	pRS425 (Christianson et al., 1992)	8A	this study
TP7862	diploid from TP2224 and TP7853	wild-type Flag-SAE2 in 2 μ pRS425 (Kim et al., 2008)	8A	this study
TP7863	diploid from TP2224 and TP7854	pTP3733 (D285P/K288P Flag-SAE2 in 2 μ pRS425)	8A	this study
TP7864	diploid from TP2224 and TP7855	pTP3851 (E161P/K163P Flag-SAE2 in 2 μ pRS425)	8A	this study
TP8055	diploid from TP2224 and LSY0678		8B	this study
TP8056	diploid from TP2224 and TP7692		8B	this study
TP8057	diploid from TP2224 and TP7966		8B	this study
TP8059	diploid from TP2224 and TP8052		8B	this study

References

- Brachmann CB, Davies A, Cost GJ, Caputo E, Li J, Hieter P, Boeke JD (1998) Designer deletion strains derived from *Saccharomyces cerevisiae* S288C: a useful set of strains and plasmids for PCR-mediated gene disruption and other applications. *Yeast* 14: 115-32
- Budd ME, Campbell JL (1995) A yeast gene required for DNA replication encodes a protein with homology to DNA helicases. *Proceedings of the National Academy of Sciences of the United States of America* 92: 7642-6
- Budd ME, Campbell JL (2009) Interplay of Mre11 nuclease with Dna2 plus Sgs1 in Rad51-dependent recombinational repair. *PLoS one* 4: e4267
- Christianson TW, Sikorski RS, Dante M, Shero JH, Hieter P (1992) Multifunctional yeast high-copy-number shuttle vectors. *Gene* 110: 119-22
- Fu Q, Chow J, Bernstein KA, Makharashvili N, Arora S, Lee CF, Person MD, Rothstein R, Paull TT (2014) Phosphorylation-regulated transitions in an oligomeric state control the activity of the sae2 DNA repair enzyme. *Mol Cell Biol* 34: 778-93
- Kim HS, Vijayakumar S, Reger M, Harrison JC, Haber JE, Weil C, Petrini JH (2008) Functional interactions between Sae2 and the Mre11 complex. *Genetics* 178: 711-23
- Krogh BO, Llorente B, Lam A, Symington LS (2005) Mutations in Mre11 Phosphoesterase Motif I That Impair *Saccharomyces cerevisiae* Mre11-Rad50-Xrs2 Complex Stability in Addition to Nuclease Activity. *Genetics* 171: 1561-70
- Lee SE, Moore JK, Holmes A, Umezū K, Kolodner RD, Haber JE (1998) *Saccharomyces* Ku70, mre11/rad50 and RPA proteins regulate adaptation to G2/M arrest after DNA damage. *Cell* 94: 399-409
- Lobachev KS, Gordenin DA, Resnick MA (2002) The Mre11 complex is required for repair of hairpin-capped double-strand breaks and prevention of chromosome rearrangements. *Cell* 108: 183-93.
- Sikorski RS, Hieter P (1989) A system of shuttle vectors and yeast host strains designed for efficient manipulation of DNA in *Saccharomyces cerevisiae*. *Genetics* 122: 19-27.
- Vaze MB, Pellicoli A, Lee SE, Ira G, Liberi G, Arbel-Eden A, Foiani M, Haber JE (2002) Recovery from checkpoint-mediated arrest after repair of a double-strand break requires Srs2 helicase. *Mol Cell* 10: 373-85
- Winzeler EA, Shoemaker DD, Astromoff A, Liang H, Anderson K, Andre B, Bangham R, Benito R, Boeke JD, Bussey H, Chu AM, Connelly C, Davis K, Dietrich F, Dow SW, El Bakkoury M, Foury F, Friend SH, Gentalen E, Giaever G et al. (1999) Functional characterization of the *S. cerevisiae* genome by gene deletion and parallel analysis. *Science* 285: 901-6