

Table S2 Yeast strains used in this study

Strain	Background*	Relevant Genotype**	Experiment
SLJ1053	W303	<i>a mps3Δ::NATMX leu2-3,112 ADE2 lys2Δ pURA3-MPS3</i>	
SLJ1678	W303	<i>a mps3Δ::NATMX leu2::MPS3-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A, 6B
SLJ1613	W303	<i>a mps3Δ::NATMX leu2::mps3ΔSUN1-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A
SLJ1615 & SLJ1616	W303	<i>a mps3Δ::NATMX leu2::mps3ΔSUN2-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A
SLJ1614	W303	<i>a mps3Δ::NATMX leu2::mps3ΔSUN-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A
SLJ1712	W303	<i>a mps3Δ::HIS3MX leu2::mps3-Y502H-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A, 7B
SLJ1622	W303	<i>a mps3Δ::NATMX leu2::mps3-A540D-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A, 7B
SLJ1711	W303	<i>a mps3Δ::NATMX leu2::mps3-F592S-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A, 7B, S2
SLJ1370	W303	<i>a mps3Δ::NATMX leu2::mps3Δ75-150-LEU2 ADE2 lys2Δ pURA3-MPS3</i>	Figure 1A
SLJ1883	BY	<i>α can1Δ::STE2pr-HIS5Sp lyp1Δ met15Δ0</i>	
SLJ4186	BY	<i>α mps3Δ::MPS3-NATMX can1Δ::STE2pr-HIS5Sp lyp1Δ met15Δ0 pURA3-MPS3</i>	Figure 1A
SLJ1885	BY	<i>α mps3Δ::mps3-Y502H-NATMX can1Δ::STE2pr-HIS5Sp lyp1Δ met15Δ0 pURA3-MPS3</i>	Figure 1A
SLJ1887	BY	<i>α mps3Δ::mps3-A540D-NATMX can1Δ::STE2pr-HIS5Sp lyp1Δ met15Δ0 pURA3-MPS3</i>	Figure 1A
SLJ1886	BY	<i>α mps3Δ::mps3-F592S-NATMX can1Δ::STE2pr-HIS5Sp lyp1Δ met15Δ0 pURA3-MPS3</i>	Figure 1A
SLJ2153	BY	<i>α mps3Δ::mps3Δ75-150-NATMX can1Δ::STE2pr-HIS5Sp lyp1Δ met15Δ0 pURA3-MPS3</i>	Figure 1A
SLJ6406	SK-1	<i>a mps3Δ::NATMX pURA3-MPS3</i>	
SLJ6407	SK-1	<i>α mps3Δ::NATMX pURA3-MPS3</i>	
SLJ6408 x SLJ6409	SK-1	<i>a/α mps3Δ::NATMX/mps3Δ::NATMX leu2::MPS3-LEU2/leu2::MPS3-LEU2 pURA3-MPS3</i>	Figure 1B, C
SLJ6417 x SLJ6418	SK-1	<i>a/α mps3Δ::NATMX/mps3Δ::NATMX leu2::mps3ΔSUN1-LEU2/leu2::mps3ΔSUN1-LEU2 pURA3-MPS3</i>	Figure 1B, C
SLJ6420 x SLJ6421	SK-1	<i>a/α mps3Δ::NATMX/mps3Δ::NATMX leu2::mps3ΔSUN2-LEU2/leu2::mps3ΔSUN2-LEU2 pURA3-MPS3</i>	Figure 1B, C
SLJ6423 x SLJ6424	SK-1	<i>a/α mps3Δ::NATMX/mps3Δ::NATMX leu2::mps3ΔSUN2-LEU2/leu2::mps3ΔSUN2-LEU2 pURA3-MPS3</i>	Figure 1B, C

SLJ6414 x SLJ6415	SK-1	<i>a/α mps3Δ::NATMX/mps3Δ::NATMX leu2::(2xmps3ΔSUN-LEU2)/leu2::(2xmps3ΔSUN-LEU2) pURA3-MPS3</i>	Figure 1B, C
SLJ6411 x SLJ6412	SK-1	<i>a/α mps3Δ::NATMX/mps3Δ::NATMX leu2::mps3Δ75-150-LEU2/leu2::mps3Δ75-150-LEU2 pURA3-MPS3</i>	Figure 1B, C
SLJ001	W303	<i>a</i>	Figure 5B, 5C, S2, S3A, S3B
SLJ3529	W303	<i>a mps3::MPS3-3xFLAG-KANMX</i>	Figure 5B, S3B
SLJ3864	W303	<i>a slp1::SLP1-3xFLAG-KANMX</i>	Figure 5B, 5C, S2, S3A
SLJ3837	W303	<i>a emp65Δ::GAL-3xHA-EMP65-HIS3MX</i>	Figure 5B, 5C, S2
SLJ4048	W303	<i>α slp1::SLP1-3xFLAG-KANMX emp65Δ::GAL-3xHA-EMP65-HIS3MX</i>	Figure 5C
SLJ6040	W303	<i>a mps3Δ::NATMX emp65Δ::GAL-3xHA-EMP65-HIS3MX pURA3-MPS3</i>	Figure 5D
SLJ6088	W303	<i>a mps3Δ::NATMX emp65Δ::GAL-3xHA-EMP65-HIS3MX SLP1-3xFLAG-KANMX leu2::MPS3-LEU2</i>	Figure 5D
SLJ6086	W303	<i>a mps3Δ::NATMX emp65Δ::GAL-3xHA-EMP65-HIS3MX SLP1-3xFLAG-KANMX leu2::mps3-F592S-LEU2</i>	Figure 5D
SLJ6087	W303	<i>a mps3Δ::NATMX emp65Δ::GAL-3xHA-EMP65-HIS3MX SLP1-3xFLAG-KANMX leu2::mps3-Y502H-LEU2</i>	Figure 5D
SLJ6092	W303	<i>a mps3Δ::NATMX emp65Δ::GAL-3xHA-EMP65-HIS3MX SLP1-3xFLAG-KANMX leu2::mps3Δ75-150-LEU2</i>	Figure 5D
SLJ6525	W303	<i>a slp1Δ::KANMX his3::SLP1-3xGFP-HIS3 trp1::HDEL-dsRED-TRP1 ADE2</i>	Figure 6A
SLJ4074	W303	<i>a emp65Δ::GAL-GFP-EMP65-KANMX trp1::HDEL-dsRED-TRP1 ADE2</i>	Figure 6B, S2
SLJ6430	BY	<i>α tub4::TUB4-GFP-HYGMX::mCherry-TUB1-URA3</i>	Figure 7A
SLJ6434	BY	<i>α slp1Δ::KANMX tub4::TUB4-GFP-HYGMX::mCherry-TUB1-URA3</i>	Figure 7A
SLJ6436	BY	<i>α emp65Δ::KANMX tub4::TUB4-GFP-HYGMX::mCherry-TUB1-URA3</i>	Figure 7A
SLJ3136	W303	<i>a slp1Δ::KANMX</i>	Figure 7B
SLJ3277	W303	<i>a emp65Δ::KANMX</i>	Figure 7B
	W303	<i>a htb2::HTB2-mCherry-URA3MX ADE2</i>	Figure 8B, C
	W303	<i>a mps3::MPS3-GFP-NATMX htb2::HTB2-mCherry-URA3MX ADE2 lys2Δ</i>	Figure 8A, B, C
	W303	<i>a slp1Δ::KANMX mps3::MPS3-GFP-NATMX htb2::HTB2-mCherry-URA3MX ADE2</i>	Figure 8A, B, C

	W303	<i>a emp65Δ::KANMX mps3::MPS3-GFP-NATMX htb2::HTB2-mCherry-URA3MX ADE2</i>	Figure 8A, B, C
SLJ5982	W303	<i>α mps3Δ::mps3-A540D emp65Δ::GAL-GFP-EMP65-KANMX</i>	Figure S2
SLJ5985	W303	<i>α mps3Δ::mps3-F592S emp65Δ::GAL-GFP-EMP65-KANMX</i>	Figure S2
SLJ771	W303	<i>a ADE2</i>	Figure S2
SLJ6086	W303	<i>a slp1::SLP1-3xFLAG-KANMX emp65Δ::GAL-3xHA-EMP65-HIS3MX mps3Δ::NATMX leu2::mps3-F592S-LEU2</i>	Figure S2
SLJ1234	W303	<i>α mps3::MPS3-3xHA-HIS3MX</i>	Figure S3A
SLJ5854	W303	<i>α mps3::MPS3-3xHA-HIS3MX slp1::SLP1-3xFLAG-KANMX</i>	Figure S3A
SLJ6151	W303	<i>α mps3::MPS3-3xHA-HIS3MX slp1::SLP1-3xFLAG-KANMX emp65Δ::HYGMX</i>	Figure S3A
SLJ5846	W303	<i>a mps3::MPS3-3xFLAG-KANMX emp65Δ::GAL-3xHA-EMP65-HIS3MX</i>	Figure S3B
SLJ6057	W303	<i>α mps3::MPS3-3xFLAG-KANMX emp65Δ::GAL-3xHA-EMP65-HIS3MX slp1Δ::NATMX</i>	Figure S3B

W303 are *ade2-1 ura3-1 trp1-1 leu2-3,112 his3-11, 15 can1-100*, BY are *ura3Δ0 leu2Δ0 his3Δ1* and SK-1 are *ho::hisG lys2 ura3 leu2::hisG trp1ΔFA::hisG his3-11,15*

** pURA3-MPS3 was removed by plating cells to 5-FOA immediately before the experiment