

**Supplementary Table 1 | List of strains used in this study.**

<b>Name</b>	<b>Genotype</b>	<b>Source and reference</b>
BY4741	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0</i>	Thermo Scientific Open Biosystem
<i>ire1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 ire1::kanMx</i>	Thermo Scientific Open Biosystem
<i>hac1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 hac1::kanMx</i>	Thermo Scientific Open Biosystem
<i>sfp1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sfp1::kanMx</i>	Thermo Scientific Open Biosystem
<i>DAmP mrs6</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 mrs6-3'UTR::kanMx</i>	GE Dharmacon
<i>sfp1-GFP</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sfp1-GFP(S65T)-His3MX</i>	Thermo Fisher Scientific
<i>fus3Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 fus3::kanMx</i>	Thermo Scientific Open Biosystem
<i>hog1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 hog1::kanMx</i>	Thermo Scientific Open Biosystem
<i>kss1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 kss1::kanMx</i>	Thermo Scientific Open Biosystem
<i>mpk1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 mpk1::kanMx</i>	Thermo Scientific Open Biosystem
<i>smk1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 smk1::kanMx</i>	Thermo Scientific Open Biosystem
<i>bck1Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 bck1::kanMx</i>	Thermo Scientific Open Biosystem
<i>mkk1/2Δ</i> (BY4741)	<i>MATa his3Δ1 met15Δ0 ura3Δ0 mkk1::leu2 mkk2::kanMx</i>	This study
<i>rpn4Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 rpn4::kanMx</i>	Thermo Scientific Open Biosystem
<i>rpt4-145</i> (BY4741)	<i>MATa rpt4-145 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0</i>	Zhijian Li <i>et al.</i> , 2011
<i>kog1-1</i> (BY4741)	<i>MATa kog1-1 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0</i>	Zhijian Li <i>et al.</i> , 2011
<i>adc17Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 adc17::kanMx</i>	Thermo Scientific Open Biosystem
<i>nas2Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 nas2::kanMx</i>	Thermo Scientific Open Biosystem
<i>nas6Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 nas6::kanMx</i>	Thermo Scientific Open Biosystem
<i>hsm3Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 hsm3::kanMx</i>	Thermo Scientific Open Biosystem
<i>rpn14Δ</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 rpn14::kanMx</i>	Thermo Scientific Open Biosystem
<i>adc17Δ nas6 Δ</i>	<i>MATa leu2Δ0 met15Δ0 ura3Δ0 adc17::his5 nas6::kanMx</i>	This study
<i>adc17Δ rpn14 Δ</i>	<i>MATa leu2Δ0 met15Δ0 ura3Δ0 adc17::his5 rpn14::kanMx</i>	This study
<i>rpn14Δ nas6 Δ</i>	<i>MATa his3Δ1 leu2Δ0 met15Δ0 nas6::ura3 rpn14::kanMx</i>	This study
<i>adc17Δ rpn14Δ nas6 Δ</i>	<i>MATa leu2Δ0 met15Δ0 nas6::ura3 adc17::his5 rpn14::kanMx</i>	This study
<i>rpn4-TAP</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 rpn4::rpn4-TAP-His3MX</i>	GE Dharmacon
<i>pba1-TAP</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 pba1::pba1-TAP-His3MX</i>	GE Dharmacon
<i>pba2-TAP</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 pba2::pba2-TAP-His3MX</i>	GE Dharmacon
<i>pba3-TAP</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 pba3::pba3-TAP-His3MX</i>	GE Dharmacon
<i>pba4-TAP</i> (BY4741)	<i>MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 pba4::pba4-TAP-His3MX</i>	GE Dharmacon
<i>rpn4-TAP mpk1Δ</i>	<i>MATa his3Δ1 leu2Δ0 met15Δ0 mpk1::ura3 rpn4::rpn4-TAP-His3MX</i>	This study
<i>pba1-TAP mpk1 Δ</i>	<i>MATa his3Δ1 leu2Δ0 met15Δ0 mpk1::ura3 pba1::pba1-TAP-His3MX</i>	This study
<i>pba2-TAP mpk1 Δ</i>	<i>MATa his3Δ1 leu2Δ0 met15Δ0 mpk1::ura3 pba2::pba2-TAP-His3MX</i>	This study
<i>pba3-TAP mpk1 Δ</i>	<i>MATa his3Δ1 leu2Δ0 met15Δ0 mpk1::ura3 pba3::pba3-TAP-His3MX</i>	This study
<i>pba4-TAP mpk1 Δ</i>	<i>MATa his3Δ1 leu2Δ0 met15Δ0 mpk1::ura3 pba4::pba4-TAP-His3MX</i>	This study

**Supplementary Table 2 | List of plasmids used in this study.**

<b>Insert</b>	<b>Vector</b>	<b>Source and reference</b>
MPK1	p416 GPD	This study
HOG1	p416 GPD	This study
MPK1-K52R	p416 GPD	This study
ADC17	p416 GPD	Hanssum <i>et al.</i> , 2014
NAS2	p416 GPD	This study
NAS6	p416 GPD	This study
HSN3	p416 GPD	This study
RPN14	p416 GPD	This study
ADC17	p415 GPD	Hanssum <i>et al.</i> , 2014
NAS2	p415 GPD	This study
NAS6	p415 GPD	Hanssum <i>et al.</i> , 2014
RPN14	p415 GPD	Hanssum <i>et al.</i> , 2014
NAS2	p413 GPD	This study
NAS6	p413 GPD	This study
HSM3	p413 GPD	This study
human ERK5	p416 GPD	This study
Ura3-3(GFP)	pRS414	Lewis and Pelham, 2009
CPY*-HA	pRS316	DH. Wolf
$\Delta$ ss-CPY*-GFP	pRS316	DH. Wolf