

## Supplementary data

**Table S1. List of strains used in this study.**

Strains	Organism	Genotype	Reference
<b>DH 10 B</b>	<i>E. coli</i>	F- <i>end A1 recA1 galE15 galK16 nupGrpsLΔlacX74 (p80lac ZΔM15 araD139 Δ(ara,leu)7697 mcrAΔ (mrrhsdRMS-mcrBC)λ</i>	Lab strain
<b>BY4741</b>	<i>S. cerevisiae</i>	<i>MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0</i>	Lab strain
<b>BY4742</b>	<i>S. cerevisiae</i>	<i>MATa; his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0</i>	Lab strain
<b>Y16152</b>	<i>S. cerevisiae</i>	<i>BY4742; MATa his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0, BEM2::KanMX4</i>	Euroscarf
<b>Y14701</b>	<i>S. cerevisiae</i>	<i>BY4742; MATa his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0, ENV11::KanMX4</i>	Euroscarf
<b>Y11979</b>	<i>S. cerevisiae</i>	<i>BY4742; MATa his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0, BNI4::KanMX4</i>	Euroscarf
<b>Y17304</b>	<i>S. cerevisiae</i>	<i>BY4742; MATa his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0, DCG1::KanMX4</i>	Euroscarf
<b>Y14547</b>	<i>S. cerevisiae</i>	<i>BY4742; MATa his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0, ATG1::KanMX4</i>	Euroscarf
<b>Y16017</b>	<i>S. cerevisiae</i>	<i>BY4742; MATa his3Δ1; leu2Δ0; lys2Δ0; ura3Δ0, SIR1::KanMX4</i>	Euroscarf
<b>Y03937</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, LRG1::KanMX4</i>	Euroscarf
<b>Y02390</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, BAG7::KanMX4</i>	Euroscarf
<b>Y04225</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, SAC7::KanMX4</i>	Euroscarf
<b>Y00993</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, MPK1::KanMX4</i>	Euroscarf
<b>Y02383</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, RGA1::KanMX4</i>	Euroscarf
<b>Y04215</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, RGA2::KanMX4</i>	Euroscarf
<b>Y02137</b>	<i>S. cerevisiae</i>	<i>BY4741; MATa ura3Δ0 leu2Δ0 his3Δ1 met2Δ0, BEM3::KanMX4</i>	Euroscarf
<b>YPDahl143</b>	<i>S. cerevisiae</i>	<i>MATa leu23/112, ura3Δ0, trp1-1, his3Δ15 ade21, can1100 GAL SUC2 SSK1::KanMX, SHO::TRP1</i>	Lab strain

<b>ASC 4</b>	<i>S. cerevisiae</i>	BY4741; <i>BNI1::KanMX4,BEM2::URA3</i>	Present study
<b>ASC 5</b>	<i>S. cerevisiae</i>	BY4741; <i>BNR1::KanMX4, BEM2::URA3</i>	Present study
<b>ASC 6</b>	<i>S. cerevisiae</i>	BY4741; <i>FKS2::KanMX4, BEM2::URA3</i>	Present study
<b>ASC 7</b>	<i>S. cerevisiae</i>	BY4741; <i>SKN7::KanMX4,BEM2::URA3</i>	Present study
<b>ASC 8</b>	<i>S. cerevisiae</i>	BY4741; <i>CRZ1::KanMX4,BEM2::LEU2</i>	Present study
<b>ASC 9</b>	<i>S. cerevisiae</i>	BY4741; <i>MBP1::KanMX4, BEM2::LEU2</i>	Present study
<b>ASC 10</b>	<i>S. cerevisiae</i>	BY4741; <i>SWE1::KanMX4,BEM2::LEU2</i>	Present study
<b>ASC 11</b>	<i>S. cerevisiae</i>	BY4741; <i>SWI6::KanMX4, BEM2::LEU2</i>	Present study

**Table S2. List of plasmids used in this study.**

<b>Plasmids</b>	<b>Description</b>	<b>Source</b>
p423 TEF	<i>HIS3 2μ</i>	Mumberg et al. [46]
p426 TEF	<i>URA3 2μ</i>	Mumberg et al. [46]
pGEM7Z	Amp <sup>r</sup> <i>lacZ</i> polylinker	Promega
pRS423	<i>HIS3 2μ</i>	Christianson et al. [47]
pRS313	<i>HIS3 ARS</i>	Sikorski et al. [17]
pClNik1	<i>CINIK1</i> ORF cloned in p423 TEF	Randhwa et al. [20]
p426-CINik1	<i>CINIK1</i> ORF cloned in p426 TEF	Randhwa et al. [20]
pUG 72	<i>loxP-URA3-loxP</i>	Gueldener et al. [18]
pUG 73	<i>loxP-LEU2-loxP</i>	Gueldener et al. [18]
pBEM2-313	<i>BEM2</i> ORF cloned in pRS313	Present Study
pBEM2-GAP	R2003A mutant of <i>BEM2</i> cloned in pRS313	Present Study
pBEM2-1749	Δ2-1749 mutant of <i>BEM2</i> cloned in pRS313	Present Study
pMPK1-313	<i>MPK1</i> ORF cloned in pRS313	Present Study
pMPK1-83	K83A mutant of <i>MPK1</i> cloned in pRS313	Present Study
pMPK1-54	K54R mutant of <i>MPK1</i> cloned in pRS313	Present Study
pMPK1-196	R196A mutant of <i>MPK1</i> cloned in pRS313	Present Study

**Table S3. Details of transposon insertion sites.**

Genes	ORF size (bp)	Transposon insertion site in ORF (bp)
<i>BEM2</i>	<b>6504</b>	<b>3807</b>
<i>ENV11</i>	<b>2583</b>	<b>1692</b>
<i>BNI4</i>	<b>2679</b>	<b>802</b>
<i>DCG1</i>	<b>735</b>	<b>478</b>
<i>ATG1</i>	<b>2694</b>	<b>823</b>
<i>SIR1</i>	<b>1965</b>	<b>627</b>