

Supplementary Materials

Supplementary Figures

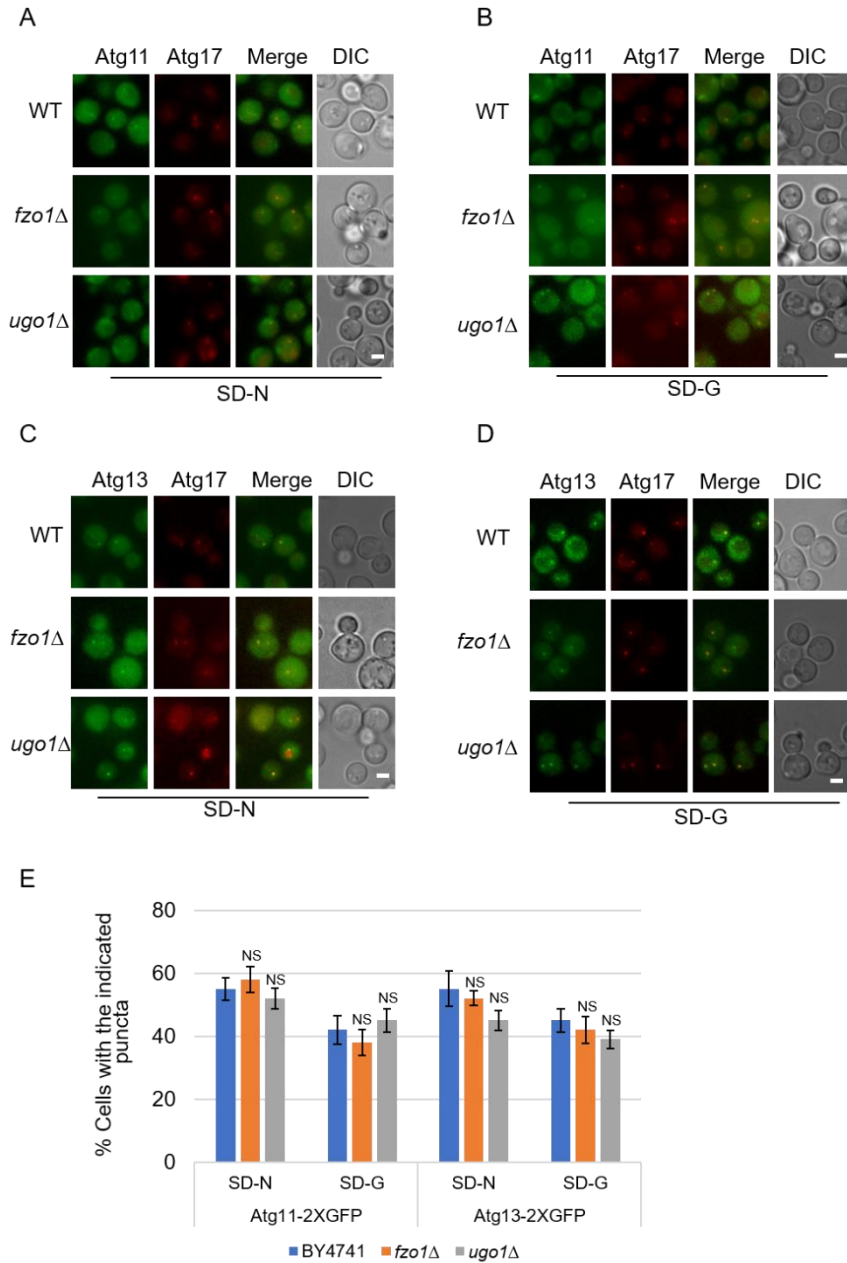


Figure S1. The deletion of mitochondrial fusion machinery did not affect the recruitment of Atg11 and Atg13 protein to PAS under glucose starvation condition. (A-D) Atg11-2XGFP and Atg17-2XCherry or Atg13-2XGFP and Atg17-2XCherry were co-expressed in the wild type (WT), *fzo1Δ*, and *ugo1Δ* yeast strains. Yeast cells were cultured in SD-N and SD-G for 1 h. Cells were imaged by inverted fluorescence

microscope. Scale bar, 2 μm . **(E)** Strains from (A-D) were analyzed for the number of cells with the indicated puncta. $n= 300$ cells pooled from 3 independent experiments. Data are presented as means \pm s.d. NS, not significant; two-tailed Student's t tests were used.

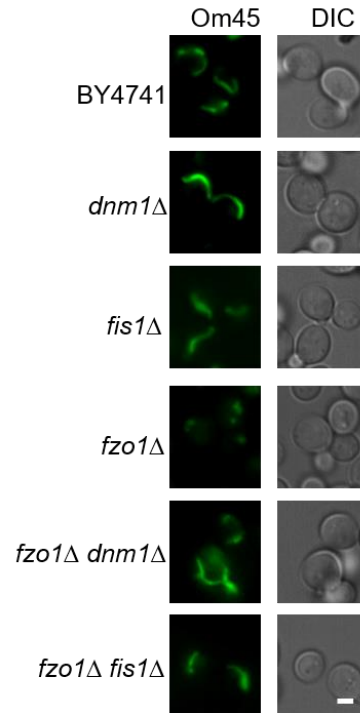


Figure S2. Mitochondrial morphology is restored in fission and fusion double mutant cells. Om45-GFP (mitochondria marker) was expressed in WT (BY4741), *dnm1* Δ , *fis1* Δ , *fzo1* Δ , *fzo1* Δ *dnm1* Δ , and *fzo1* Δ *fis1* Δ strains. Yeast cells were grown to the log-growth phase. Cells were imaged by inverted fluorescence microscope. Scale bar, 2 μm .

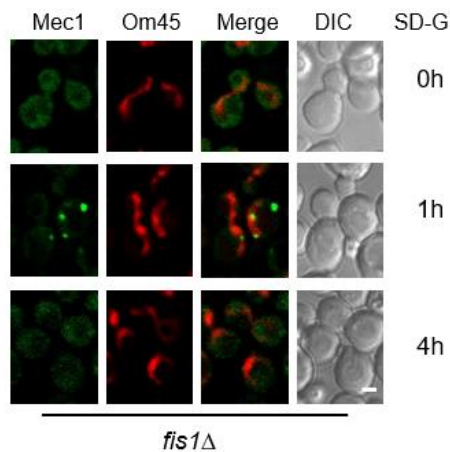
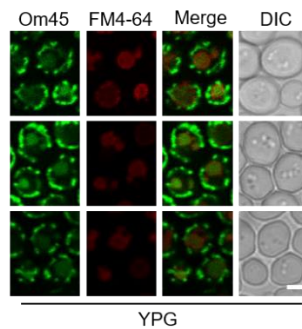


Figure S3. Fis1 is not involved in the dissociation of Mec1 from mitochondria under prolonged glucose starvation. GFP-Mec1 and Om45-Cherry were co-expressed in *fis1Δ* yeast strain. Yeast cells were grown to the log-growth phase, then subjected to SD-G for 0 h, 1 h and 4 h. Cells were viewed by confocal laser scanning microscope. Scale bar, 2 μ m.

A



B

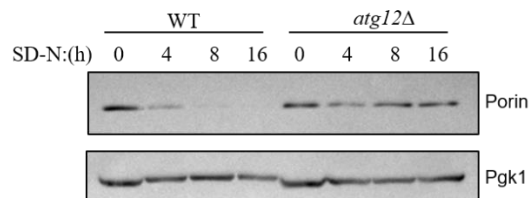


Figure S4. Mitophagy in YPG medium and nitrogen starvation condition. (A) Cells expressing Om45-GFP, Ato1-GFP or Atp5-GFP were grown to log-growth phase in SD-His medium, and then subjected to YPG medium for 24 h. Cells were viewed by

confocal microscope. Scale bar, 2 μ m. **(B)** Wild type cells were grown to log-growth phase in YPD medium, and then starved in SD-N medium for 0 h, 4 h, 8 h and 16 h. Porin and P_{gk1} proteins were measured by western blot using the corresponding antibodies.

Supplementary Tables

Table S1. Yeast strains in this study

Name	Genotype	Source
YM1	<i>BY4741</i>	Lab stock
YM2	<i>BY4741 fis1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM3	<i>BY4741 dnm1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM4	<i>BY4741 caf4Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM5	<i>BY4741 mdv1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM6	<i>BY4741 mgm1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM7	<i>BY4741 pcp1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM8	<i>BY4741 ugo1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM9	<i>BY4741 fzo1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM10	<i>BY4741 mdm20Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM11	<i>BY4741 mdm31Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM12	<i>BY4741 mdm32Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM13	<i>BY4741 mdm33Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM14	<i>BY4741 gem1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM15	<i>BY4741 Atg17-2XCherry::hphNT1 Atg2-2XGFP::Ura3</i>	in this study
YM16	<i>BY4741 fzo1Δ::KanMX6 Atg17-2XCherry::hphNT1 Atg2-2XGFP::Ura3</i>	in this study
YM17	<i>BY4741 ugo1Δ::KanMX6 Atg17-2XCherry::hphNT1 Atg2-2XGFP::Ura3</i>	in this study
YM18	<i>BY4741 Atg17-2XCherry::hphNT1 Atg5-2XGFP::Ura3</i>	in this study
YM19	<i>BY4741 fzo1Δ::KanMX6 Atg17-2XCherry::hphNT1 Atg5-2XGFP::Ura3</i>	in this study
YM20	<i>BY4741 ugo1Δ::KanMX6 Atg17-2XCherry::hphNT1 Atg5-2XGFP::Ura3</i>	in this study
YM21	<i>BY4741 Atg17-2XCherry::hphNT1 Atg11-2XGFP::Ura3</i>	in this study
YM22	<i>BY4741 fzo1Δ::KanMX6 Atg17-2XCherry::hphNT1 Atg11-2XGFP::Ura3</i>	in this study
YM23	<i>BY4741 ugo1Δ::KanMX6 Atg17-2XCherry::hphNT1 Atg11-2XGFP::Ura3</i>	in this study
YM24	<i>BY4741 Atg17-2XCherry::hphNT1 pRS316[GFP-Atg1 Ura3]</i>	in this study
YM25	<i>BY4741 fzo1Δ::KanMX6 Atg17-2XCherry::hphNT1 pRS316[GFP-Atg1 Ura3]</i>	in this study
YM26	<i>BY4741 ugo1Δ::KanMX6 Atg17-2XCherry::hphNT1 pRS316[GFP-Atg1 Ura3]</i>	in this study
YM27	<i>BY4741 3XFLAG-Mec1::natNT2 pRS316[HA-Snf1 Ura3]</i>	in this study
YM28	<i>BY4741 fzo1Δ::KanMX6 3XFLAG-Mec1::natNT2 pRS316[HA-Snf1 Ura3]</i>	in this study

YM29	<i>BY4741 mgm1Δ::KanMX6 3XFLAG-Mec1::natNT2 pRS316[HA-Snf1 Ura3]</i>	in this study
YM30	<i>BY4741 ugo1Δ::KanMX6 3XFLAG-Mec1::natNT2 pRS316[HA-Snf1 Ura3]</i>	in this study
YM31	<i>BY4741 GFP-Mec1::natNT2 Om45-Cherry::KanMX6</i>	Lab stock
YM32	<i>BY4741 fzo1Δ::KanMX6 GFP-Mec1::natNT2 Om45-Cherry::KanMX6</i>	In this study
YM33	<i>BY4741 ugo1Δ::KanMX6 GFP-Mec1::natNT2 Om45-Cherry::KanMX6</i>	In this study
YM34	<i>BY4741 fis1Δ::KanMX6 GFP-Mec1::natNT2 Om45-Cherry::KanMX6</i>	In this study
YM35	<i>BY4741 snf1Δ::KanMX6 GFP-Mec1::natNT2 Om45-Cherry::KanMX6 pRS316</i>	In this study
YM36	<i>BY4741 snf1Δ::KanMX6 GFP-Mec1::natNT2 Om45-Cherry::KanMX6 pRS316[HA-Snf1 Ura3]</i>	In this study
YM37	<i>BY4741 snf1Δ::KanMX6 GFP-Mec1::natNT2 Om45-Cherry::KanMX6 pRS316[HA-Snf1 KD Ura3]</i>	In this study
YM38	<i>BY4741 pho8::pho8Δ60 pho13Δ:: hphNT1</i>	Lab stock
YM39	<i>BY4741 pho8::pho8Δ60 pho13Δ:: hphNT1 atg5Δ::KanMX6</i>	Lab stock
YM40	<i>BY4741 pho8::pho8Δ60 pho13Δ:: hphNT1 atg17Δ::KanMX6</i>	Lab stock
YM41	<i>BY4741 pep4Δ::KanMX6</i>	Lab stock
YM42	<i>BY4741 Om45-GFP::HisMX6</i>	Lab stock
YM43	<i>BY4741 Alo1-GFP::HisMX6</i>	Lab stock
YM44	<i>BY4741 Atp5-GFP::HisMX6</i>	Lab stock
YM45	<i>BY4741 atg1Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	Lab stock
YM46	<i>BY4741 atg3Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	Lab stock
YM47	<i>BY4741 atg12Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	Lab stock
YM48	<i>BY4741 atg32Δ::KanMX6 pRS316[GFP-Atg8 Ura3]</i>	Lab stock
YM49	<i>BY4741 IDH1-GFP::HisMX6</i>	Lab stock
YM50	<i>BY4741 IDH2-GFP::HisMX6</i>	Lab stock
YM51	<i>BY4741 Om45-GFP::HisMX6 dnm1Δ::KanMX6</i>	In this study
YM52	<i>BY4741 Om45-GFP::HisMX6 fis1Δ::KanMX6</i>	In this study
YM53	<i>BY4741 Om45-GFP::HisMX6 fzo1Δ::KanMX6</i>	In this study
YM54	<i>BY4741 Om45-GFP::HisMX6 fzo1Δ::KanMX6 dnm1Δ:: hphNT1</i>	In this study
YM55	<i>BY4741 Om45-GFP::HisMX6 fzo1Δ::KanMX6 fis1Δ:: hphNT1</i>	In this study
YM56	<i>BY4741 fzo1Δ::KanMX6 fis1Δ:: hphNT1 pRS316[GFP-Atg8 Ura3]</i>	In this study
YM57	<i>BY4741 fzo1Δ::KanMX6 dnm1Δ:: hphNT1 pRS316[GFP-Atg8 Ura3]</i>	In this study