Supplemental Information

Supplemental Figure S1

(A) Wild-type (WT), *atg1Δ*, *atg32Δ*, and *atg11Δ* cells were pre-cultured in YPL to mid-log phase and then shifted to SD–N. After the indicated number of days, cells were inoculated onto YPD plates and the number of colonies formed was counted. The values represent the mean and standard deviation of three experiments. (B) Wild-type (WT), *atg32Δ*, and *atg11Δ* cells cultured in YPL for 5 days. Cells were inoculated onto YPD plates and the size of colonies formed was observed.

Supplemental Figure S2

(A) Wild-type (WT), *atg1Δ*, *atg32Δ*, and *atg11Δ* cells on a BY4742 background were pre-cultured in YPL to mid-log phase and then shifted to SD–N. After the indicated number of days, cells were inoculated onto YPD plates and the number of colonies formed was counted. The values represent the mean and standard deviation of three experiments. (B) Wild-type (WT), *atg32Δ*, and *atg11Δ* cells on a BY4742 background were pre-cultured in YPL to mid-log phase and then shifted to SD–N for 4 days. Cells were inoculated onto YPD plates and the size of colonies formed was observed (typical small and large colonies

are indicated by arrowheads and arrows, respectively). (C) Wild-type (WT), *atg32Δ*, and *atg11Δ* cells on a BY4742 background were pre-cultured in YPL to mid-log phase and then shifted to SD–N. After the indicated number of days of nitrogen starvation, cells were inoculated onto YPD plates and the proportion of small colonies formed was calculated (more than 80 colonies were measured for each experiment). The values represent the mean and standard deviation of three experiments. $^{**}P < 0.005$, $^{*}P < 0.01$ by paired *t*-test.

Supplemental Figure S3

(A) The agarose gels used in Figure 2C were incubated with ethidium bromide and exposed to ultraviolet light to confirm consistency in the amount of DNA loaded. (B and C) Large (L) and small (S) colonies of wild-type (WT) cells formed after 20 days nitrogen starvation were cultured in YPD to mid-log phase. Cell lysates were immunoblotted with anti-Cox2, anti-Por1, and anti-Pgk1 (loading control) antibodies (B). Whole-cell DNA was digested by Bam H1 and analyzed by Southern blotting with *COX1* and *COB* mtDNA probes (C).

Supplemental Figure S4

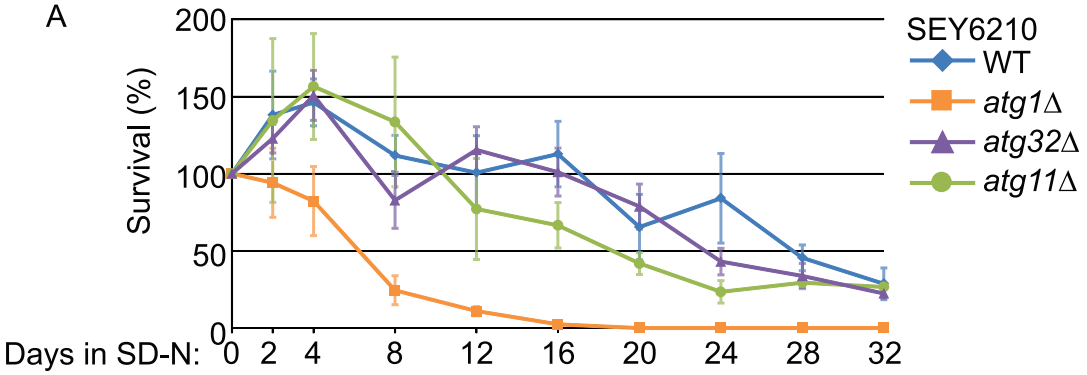
(A) The mean fluorescence strength from Figure 3A is shown graphically. The values represent the mean and standard deviation of three experiments. *$P < 0.01$ by paired *t*-test. (B) The data from Figure 3A are expressed by genotype rather than by days of nitrogen starvation. WT, wild type.

Supplemental Figure S5

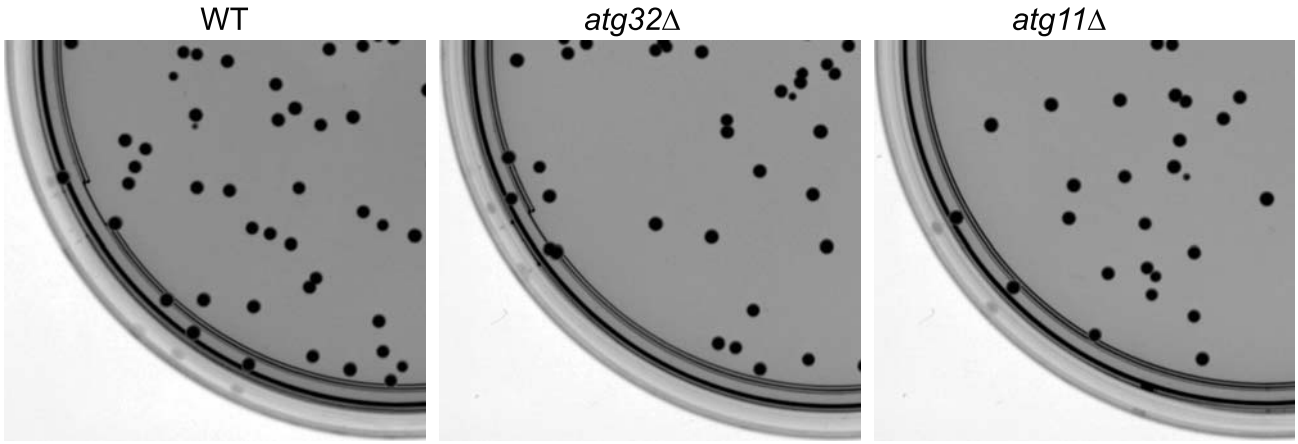
(A) Wild-type (WT), *atg32Δ*, and *atg11Δ* cells were pre-cultured in YPL to mid-log phase and then shifted to SD–N containing 1 mM of the ROS scavenger N-acetylcysteine (NAC) or dimethyl sulfoxide (control). After 6 days of nitrogen starvation, cells were inoculated onto YPD plates and the size of colonies formed was observed. (B and C) Large (L) and small (S) colonies of *atg32Δ* and *atg11Δ* cells were cultured in YPD to mid-log phase. Cell lysates were immunoblotted with anti-Cox2, anti-Por1, and anti-Pgk1 (loading control) antibodies (B). Whole-cell DNA was digested by Bam H1 and analyzed by Southern blotting with *COX1* and *COB* mtDNA probes (C).

Figure S1

A



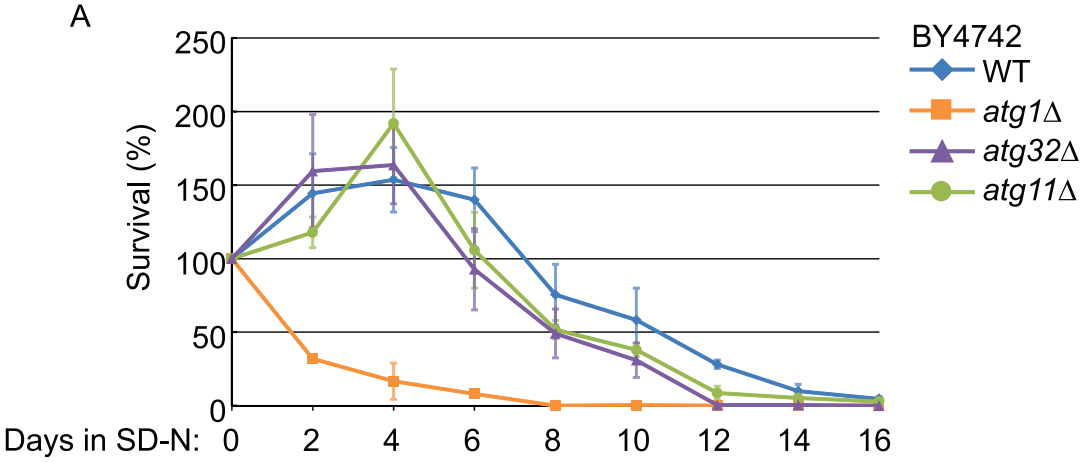
B



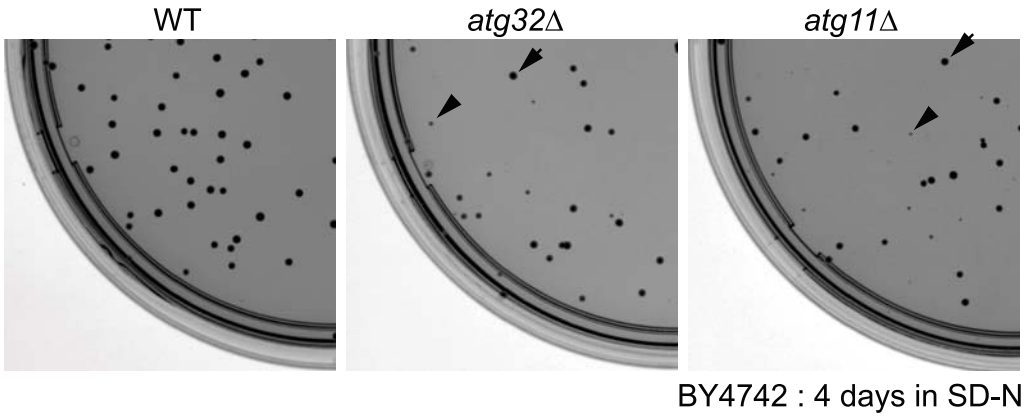
5 days in YPL

Figure S2

A



B



C

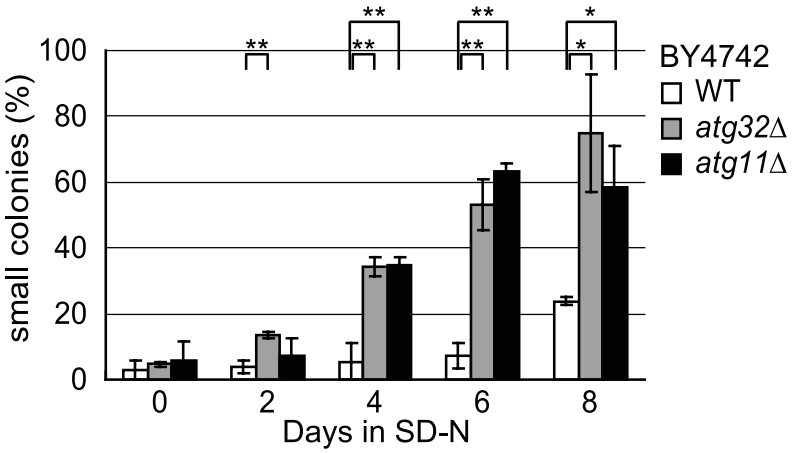
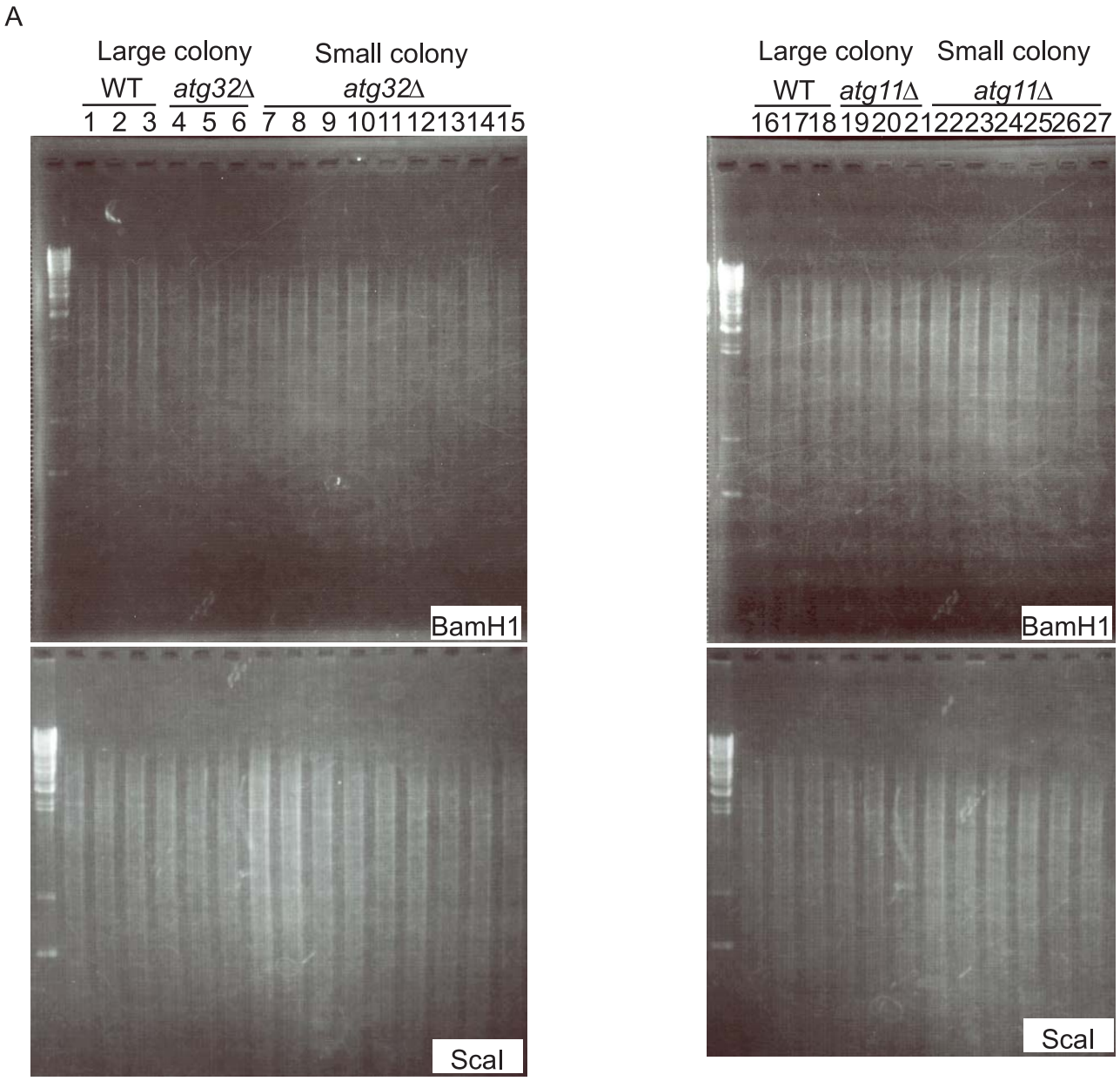
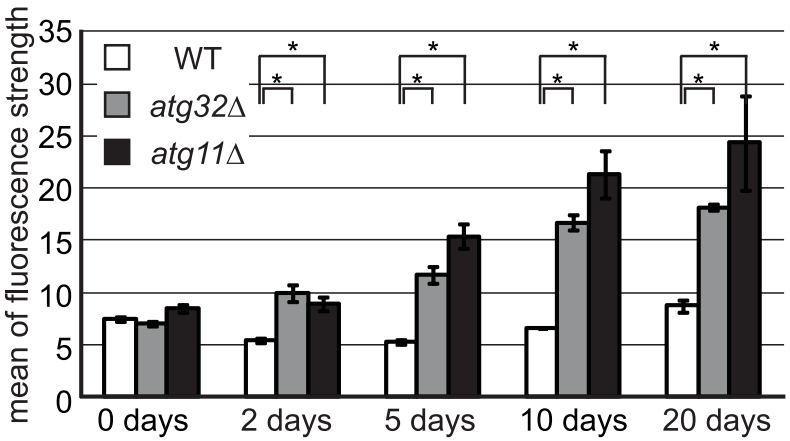


Figure S3


A
Large colony
Small colony
WT
atg32Δ
atg32Δ
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Large colony
Small colony
WT
atg11Δ
atg11Δ
16 17 18 19 20 21 22 23 24 25 26 27
BamH1
BamH1
ScaI
ScaI
B
WT
20 days in SD-N
Colony size
L L L L L S S S S S
Cox2
Por1
Pgk1
C
WT
20 days in SD-N
WT
20 days in SD-N
Colony size
L L L L L S S S S S
L L L L L S S S S S
COX1
COB
BamH1
BamH1

A


mean of fluorescence strength
35
30
25
20
15
10
5
0
WT
atg32Δ
atg11Δ
*
*
*
*
*
*
*
*
0 days
2 days
5 days
10 days
20 days

B

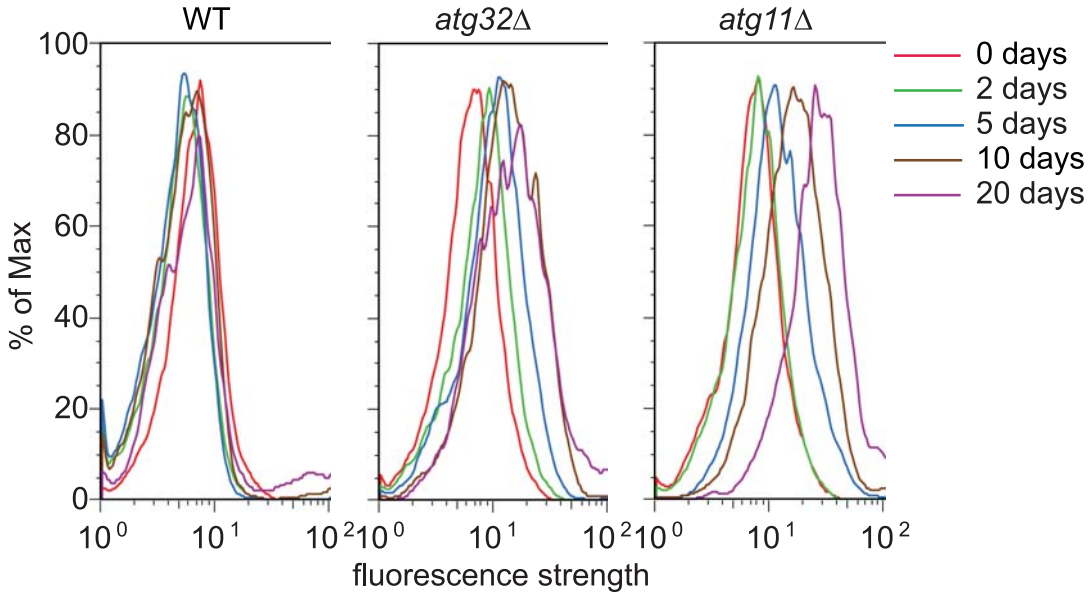
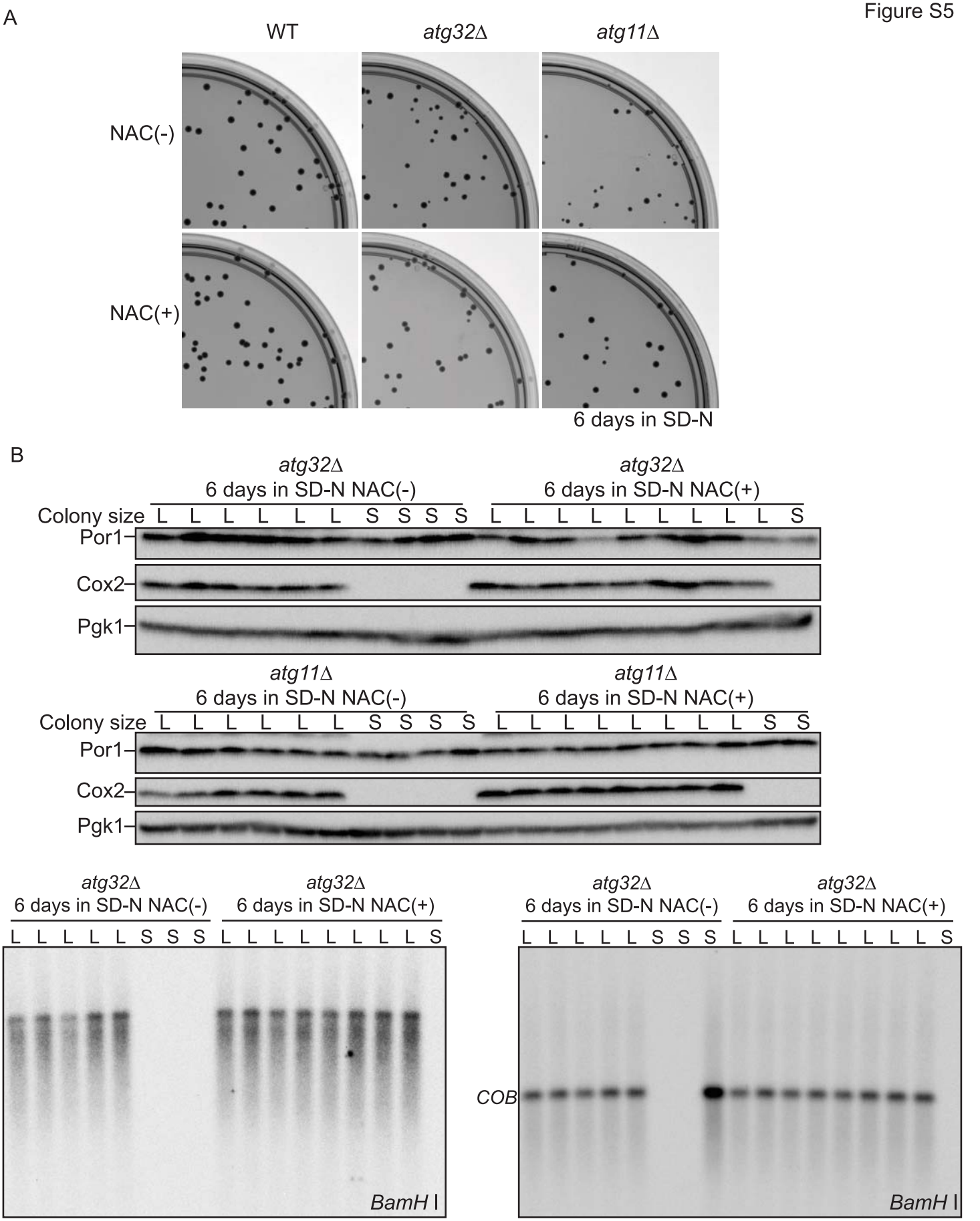

WT
atg32Δ
atg11Δ
% of Max
100
80
60
40
20
0
10 0
10 1
10 2
fluorescence strength
0 days
2 days
5 days
10 days
20 days

Figure S5


A
WT
atg32Δ
atg11Δ
NAC(-)
NAC(+)
6 days in SD-N
B
atg32Δ
6 days in SD-N NAC(-)
atg32Δ
6 days in SD-N NAC(+)
Colony size L L L L L L S S S S L L L L L L L L L S
Por1
Cox2
Pgk1
atg11Δ
6 days in SD-N NAC(-)
atg11Δ
6 days in SD-N NAC(+)
Colony size L L L L L L S S S S L L L L L L L L S S
Por1
Cox2
Pgk1
C
atg32Δ
6 days in SD-N NAC(-)
atg32Δ
6 days in SD-N NAC(+)
L L L L L S S S L L L L L L L L S
COX1
BamH I
atg32Δ
6 days in SD-N NAC(-)
atg32Δ
6 days in SD-N NAC(+)
L L L L L S S S L L L L L L L L S
COB
BamH I