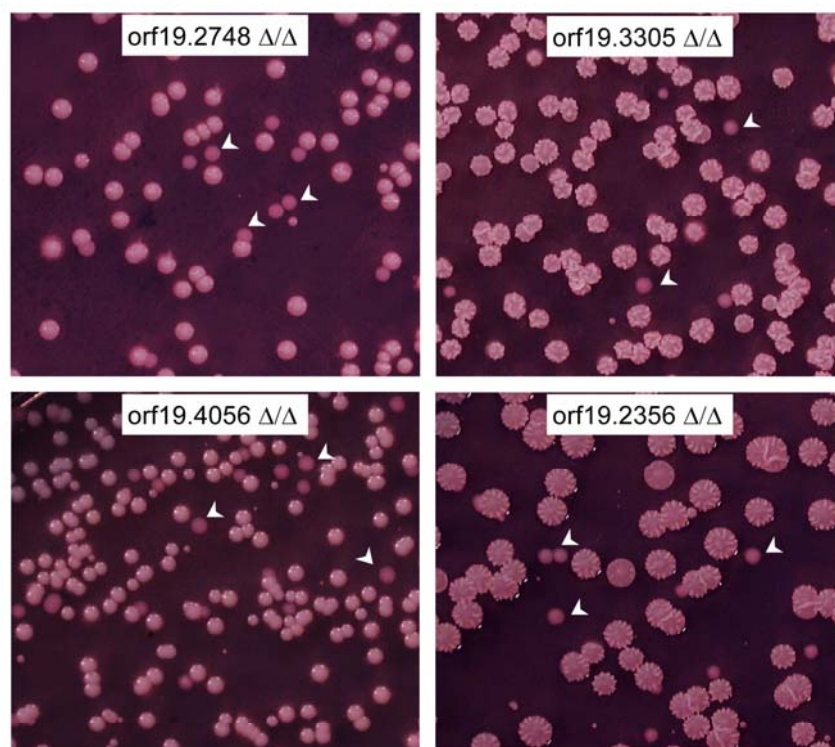
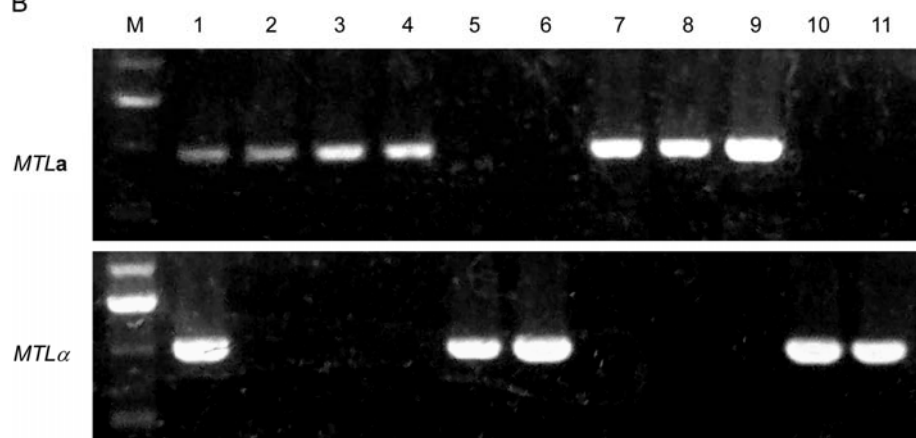


## Supplementary Figures

A

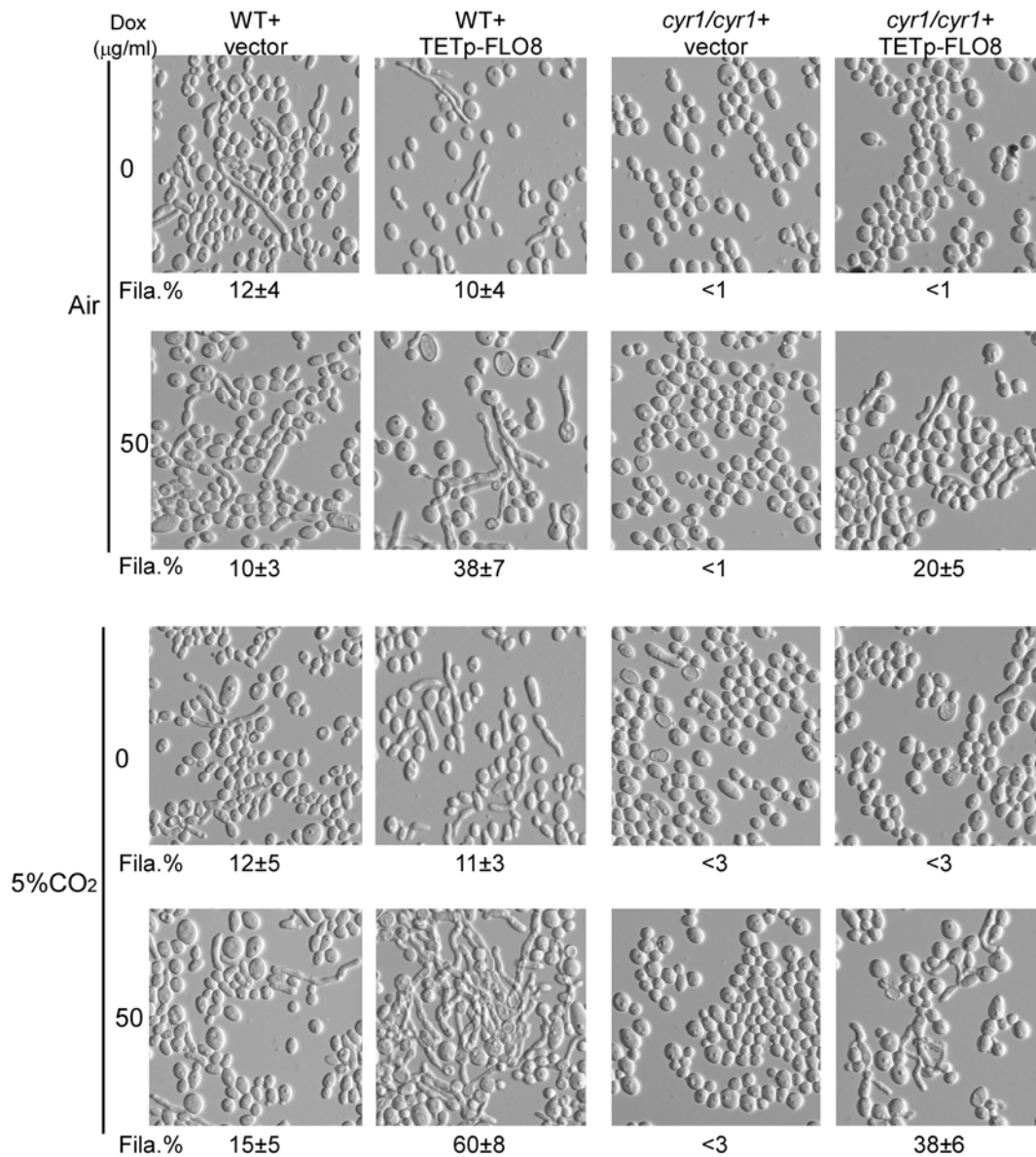


B



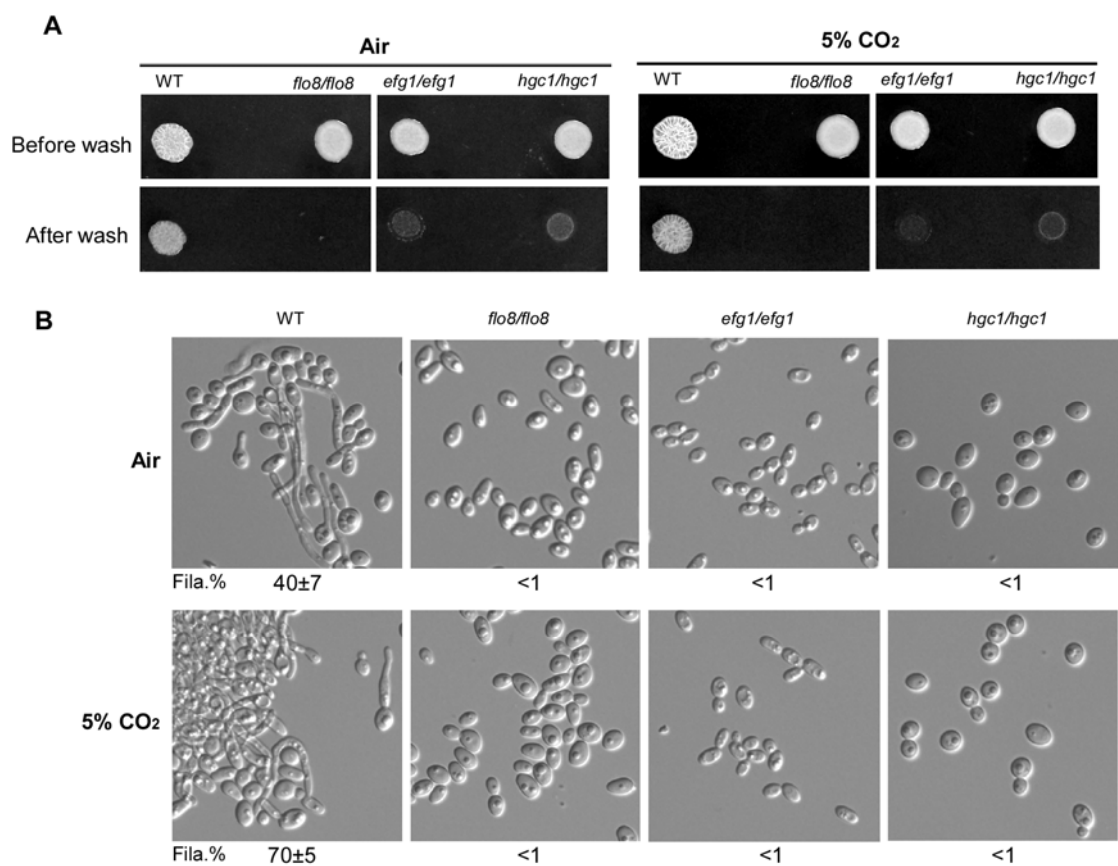
**Figure S1. Isolation of *MTL* homozygous and opaque colonies.** The method was described in the main text and **Figure 2A**. (A) Examples of colonies on Lee's + GlcNAc agar in 5% CO<sub>2</sub>. After 48 hours of incubation in liquid YPS (1% yeast extract, 2% peptone and 10% sorbose), the cells were replated onto Lee's + GlcNAc agar and incubated in 5% CO<sub>2</sub> for 5 days. The white arrows highlighted opaque colonies. The ORF numbers of the deleted

genes were indicated in the pictures. (B) PCR of *MTLa* and *MTL $\alpha$*  genes in 10 randomly selected mutants in opaque phase. The opaque colonies were isolated from Panel A. The primers used for PCR were reported by Hull et al. (2000). M, DNA ladder; lane 1, *MTLa*/ $\alpha$  reference strain; lane 2-11: strains of the No. 5, 16, 50, 59, 64, 80, 95, 138, 166, 167 listed in Table S1.



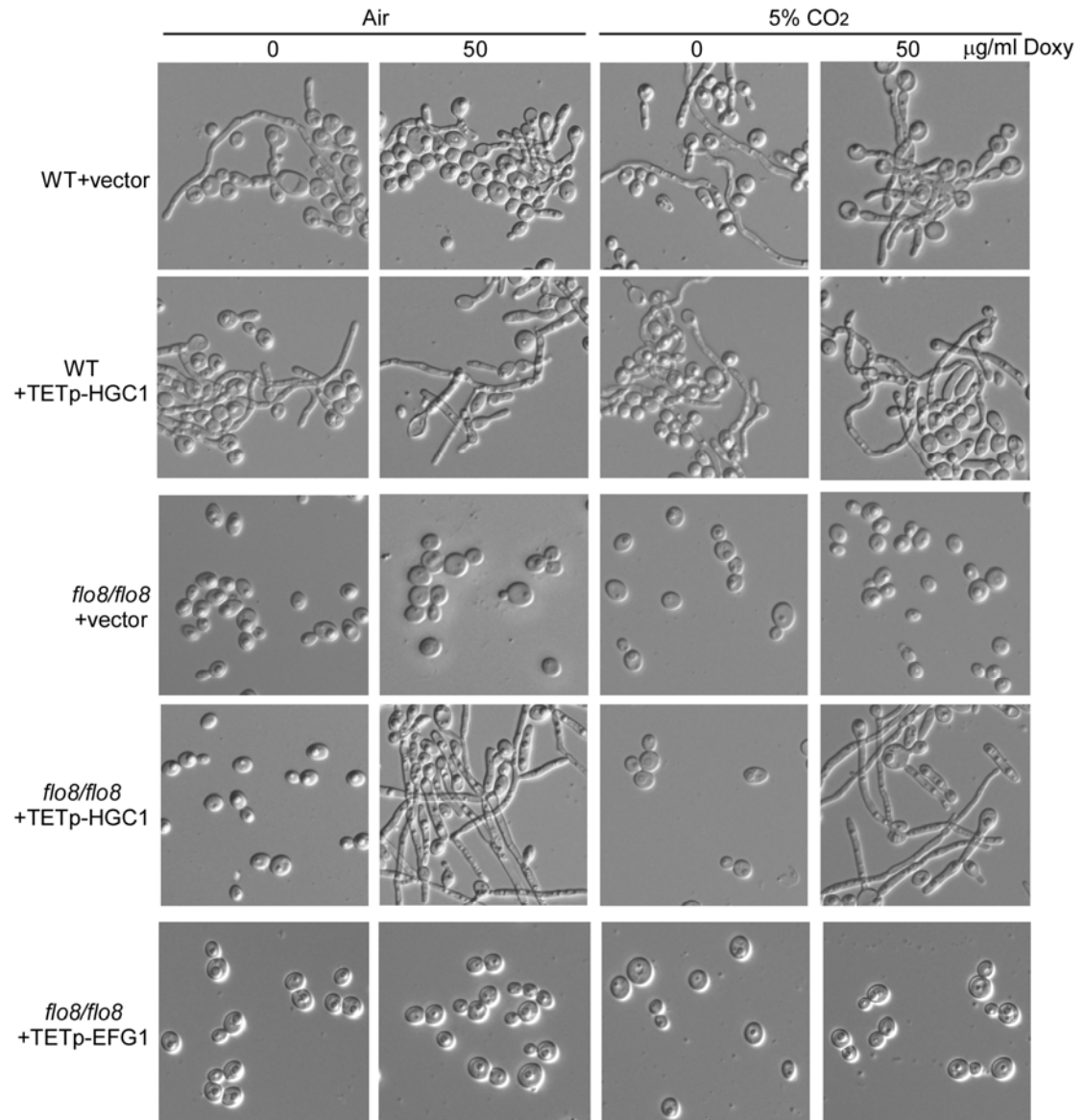
**Figure S2. Overexpression of *FLO8* promotes filamentous growth in the wild type and in the *cyr1/cyr1* mutant.**

The WT was SC5314, a clinical isolate. 2000 cells of each strain in 3 μl H<sub>2</sub>O were dropped and grown on Lee's + glucose agar with or without 50 μg/ml doxycycline. The plates were incubated in air or in 5% CO<sub>2</sub> at 37°C for 2 days before acquiring the images. The cellular phenotypes and the percentages of filamentous cells were shown. Fila.%, percentage of filamentous cells.



**Figure S3. *EFG1* and *HGC1* are required for CO<sub>2</sub> induced invasive and filamentous growth.**

2000 cells of the *efg1/efg1* and *hgc1/hgc1* mutant in 3  $\mu$ l H<sub>2</sub>O were dropped on Lee's + glucose and cultured for 5 days at 37 °C. WT and the *flo8/flo8* mutant served as positive and negative controls, respectively. (A) Invasive growth. The plates were imaged before and after wash with H<sub>2</sub>O. (B) Filamentous growth. Cells collected from panel A were analyzed by microscopy.



**Figure S4. Overexpression of *HGC1* in the *flo8/flo8* mutant promotes filamentous growth.** Cells were cultured on Lee's glucose plates in the absence or in the presence of 50  $\mu$ g/ml doxycycline at 37°C for 5 days.