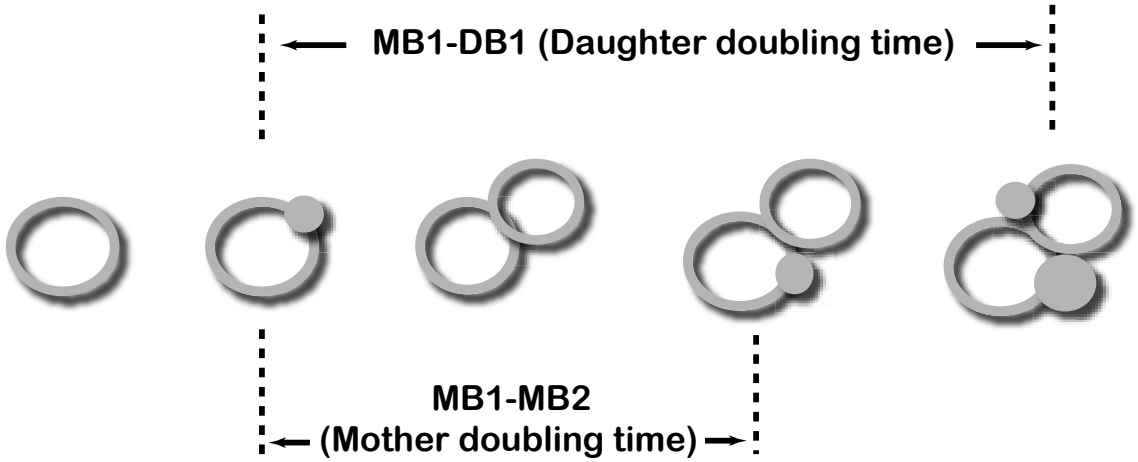
Supplemental Materials

Molecular Biology of the Cell

Yang et al.

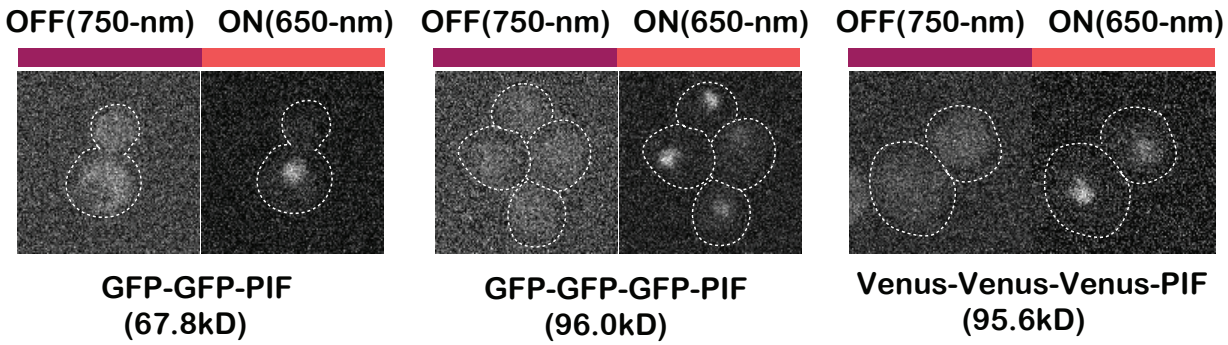
A



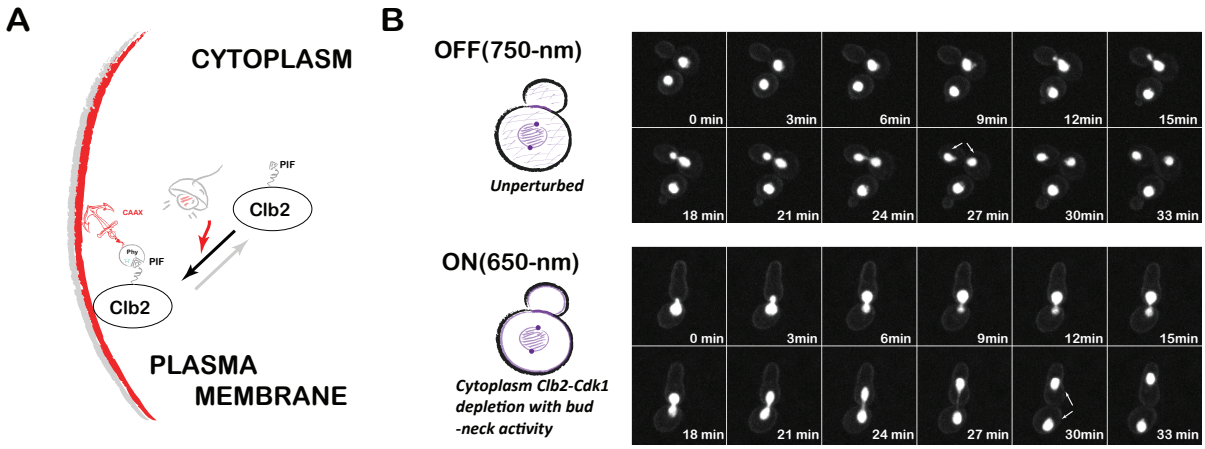
B

Conditions		Number	Mean (min)	s.d.
Bright field imaging without PCB	Mother	44	77.45455	11.23006
	Daughter	27	100.22222	15.00598
Bright field imaging with PCB	Mother	53	75.33962	11.15786
	Daughter	41	96.95122	18.95515
Fluorescence imaging without PCB	Mother	46	76.8913	9.15115
	Daughter	35	101.65714	17.04482
Fluorescence imaging with PCB	Mother	48	73 .875	11.47366
	Daughter	34	94.58824	18.67281

Supplemental Figure1. No obvious doubling time change was observed upon adding PCB, fluorescence imaging, or both. (A) Schematic of the doubling time measurement. **(B)** Doubling time in SD medium under different conditions. Data were obtained from 4hrs experiments with a 3min imaging interval. For the fluorescence imaging controls, we used the same exposure time as we used in Clb2 experiments (Green channel: 30ms; Red channel: 50ms.)



Supplemental Figure2. Nuclear recruitment (PhyB-HTB2) for high molecular weight proteins. Cells were exposed to 750 nm light for 3 mins to inactivate recruitment (system is OFF), and then cells were switched to 650 nm for 3min to activate recruitment (system is ON). Fluorescence images show GFP or Venus-tagged PIF proteins, and dashed lines show the cell boundaries.



Supplemental Figure 3. Tethering Clb2 to the plasma membrane does not result in nuclear fission failure. (A) Schematic of optogenetic nuclear recruitment of Clb2. **(B)** Sequestering Clb2 to plasma membrane (PhyB-CAAX) results in no nuclear fission defect. Fluorescence time-course images (3 min interval) when Clb2 is not recruited to the plasma membrane (750 nm light; upper panel) versus when Clb2 is recruited to the plasma membrane (with 650 nm light; lower panel). Fluorescence images show the red channel, which contains both PhyB-mCherry-CAAX and HTB2-mCherry.