Supplemental Figure Legends

Figure S1: Characterization of *rts1-AID* cells. (**A**) Wild type and *rts1-AID* cells were grown to log phase in YPD medium and cell size was measured with a Coulter counter. (**B**) Wild type and *rts1-AID* cells were released from a G1 arrest in YPGE and the timing of entry into mitosis and the duration of mitosis were determined by assaying levels of the mitotic cyclin Clb2 by western blot. (**C**) *rts1-AID* cells were released from a G1 arrest in YPD medium and auxin was added at 60 minutes. Destruction of rts1-AID was assayed by western blot with an anti-Rts1 antibody {AlcaideGavilan:2018dr}. The average rts1-AID signal was measured using BioRad Imagelab for 3 biological replicates the mean percent of rts1-AID protein remaining at each time point is listed below each lane. Rts1 migrates as multiple distinct bands that correspond to differently phosphorylated forms {AlcaideGavilan:2018dr}. Comparison of the levels of wild type Rts1 protein versus Rts1-AID protein with an anti-Rts1 antibody suggest that there is less Rts1-AID protein in cells that have not been treated with auxin. However, it may be difficult to draw strong conclusions regarding relative levels of the two proteins because the AID tag could influence how the Rts1 protein behaves during electrophoretic transfer and binding to nitrocellulose. (**D**) The rate of proliferation of *rts1Δ* and *rts1-AID* cells was tested by spotting a series of 10-fold dilutions of each strain on YPD medium containing auxin at 34ºC.

Figure S2: Dot plot versions of the data used to generate Figures 1,3, and 4. Black horizontal lines and adjacent numbers represent the average value for the data in each dot plot. The significance of the difference between two conditions is given as p-values above each plot.

Figure S3: The increased duration of mitosis in *rts1-AID* cells is partially due to Cdk1 inhibitory phosphorylation. (**A**) Cells of the indicated genotypes, grown in YPD or YPGE, were released from a G1 arrest and auxin was added at 45 min (YPD) or 75min (YPGE). Addition of auxin is denoted by *. Levels of the mitotic cyclin Clb2 were assayed by western blot. (**B**) Cells of the indicated genotypes were arrested in metaphase by depletion of *GAL1-CDC20*. After release from the arrest, levels of the mitotic cyclin Clb2 were assayed by western blot.

Figure S4: *pds1-4A* causes a reduction in the duration of metaphase and cell size at completion of metaphase.
(**A**) Average durations of metaphase and anaphase for wild type and *swe1*Δ cells growing in rich or poor carbon. (**B**) Average growth in volume for all phases of the cell cycle except G1 phase for wild type and *pds1-4A* cells growing in rich or poor carbon. (**C-F**) Dot plot versions of the data shown in panels A and B. The experiments in this figure were carried out using a different microscope than the experiments used to generate the data in Figures 3 and 4, so absolute volumes and cell cycle interval durations should not be compared between figures.