Description of files:

1. **FLmean\_Cln3\_GLU**: CSV file containing mean GFP concentration from Cln3-P2A-GFP for single daughter cells grown in glucose. Each cell is followed from birth until a few minutes after bud appearance. Data is organized by columns (one column corresponds to one cell). The first column is the vector of measurement time points (in minutes).

2. **Vol\_Cln3\_GLU**: CSV file containing cell volume for each of the daughter cells described above. Data is organized by columns (one column corresponds to one cell). The first column is the vector of measurement time points (in minutes).

3. **bud\_times**: Excel file containing the time of bud appearance for each of the daughter cells described above

4. **GP\_FLtot\_Cln3\_GLU\_example**: Matlab script used to perform Gaussian process regression (see description in Methods) on the total GFP fluorescence for each of the daughter cells described above. The script produces single-cell Cln3 abundance data used to generate Fig. 5c of the main text and Extended Data Figure 4H.

**NOTE**: in order to run, the Matlab script requires the installation of the GPML Matlab toolbox (freely available at <http://www.gaussianprocess.org/gpml/code/matlab/doc/>).