

The diagram illustrates a genetic circuit for temporal control of gene expression. A central timeline shows alternating periods of glucose (orange) and galactose (grey). Two populations of cells are shown: one on the left (yellow background) and one on the right (green background). Both populations contain a *GAL1GFP* gene construct. The left population is shown with yellow cells, and the right population is shown with green cells. Dotted lines connect the gene construct to the corresponding cell populations. A flask of glucose is connected to the first glucose period, and a flask of galactose is connected to the first galactose period.

Figure 1 consists of two panels, (a) and (b), illustrating the dynamics of GFP expression in a cell lineage over four generations. The y-axis for both panels is 'total Gal1-GFP fluorescence (a.u.)' and the x-axis is 'time'.

Panel (a) is titled 'dilution'. It shows two data series: 'mother' (dashed line) and 'daughter' (dotted line). The mother cell's fluorescence starts at a high level and decreases over time, while the daughter cell's fluorescence starts at a low level and remains low. The total fluorescence (sum of mother and daughter) decreases over time. A color scale on the right indicates 'total GFP' levels, ranging from dark green (high) to light green (low).

Panel (b) is titled 'dilution compensation'. It shows a single data series: 'mother+daughter' (dotted line). The total fluorescence remains constant over time, indicating that the daughter cell's fluorescence compensates for the dilution of the mother cell's fluorescence. A color scale on the right indicates 'total GFP' levels, ranging from dark green (high) to light green (low).

Figure 2 consists of two panels, r1 and r2, showing the repression time dependence of GFP expression. The y-axis for both panels is 'total GFP (a.u.)' and the x-axis is 'repression time (h)'. Panel r1 shows data for 102 cells, with a mean GFP expression of 0.79 ± 0.10 . Panel r2 shows data for 328 cells, with a mean GFP expression of 0.50 ± 0.03 . Both panels include individual cell traces (light blue lines) and a shaded area representing the distribution. A dotted line indicates the mean, and a black dot indicates the maximum mean.