

Table S3. Reconstruction of the WT cell state for 1 and 2.5 doub/h, 37°C. Variables denoted in bold were allowed to vary in order to minimize the MSE with respect to the WT cell state. The error in cell state was not greater than 6%. All concentrations are given in molec/cell, where V_{cell} is 1.2 and 0.63 (μm)³ at 2.5 and 1 doub/h respectively (Table S2). $n_{\sigma}=2.77$ mM. The nonlinear least squares problem was solved using the Levenberg-Marquardt method implemented in Matlab 7. See main text and S1.1.1 for further explanations.

U_{bulk}^{max} (ini/min)	$L_{m,bulk}$ ($\cdot 10^2$)	C_{ribo}	$T_{1/2,bulk}^{fm}$ (min)	U_{bulk} (ini/min)	μ doub/h	n_{bulk} ($\cdot 10^6$)	n_{ribo} ($\cdot 10^4$)	n_{RNAP} ($\cdot 10^3$)	$n_{RNAP,free}$	$n_{ribo,free}$ ($\cdot 10^3$)
40	9.57 (1.3 μM)	49	6.8	33	2.5	5.60	7.33	11.4	916	4.72
80	61.4 (8.5 μM)	53	6.8	35	2.5	5.85	7.33	11.4	916	4.72
40	5.03 (1.3 μM)	85	1.2	32	1	2.15	1.30	2.8	143	1.94
80	32.3 (8.5 μM)	90	1.3	30	1	2.23	1.30	2.8	143	1.94