

Table S1. The effect of parameter variation on the simulation half-life of CheB₁-P.

Parameter	Reaction	Fold increase in CheB ₁ -P half time due to change in parameter value*			
		0.1 x k_i	0.5 x k_i	1.5 x k_i	10 x k_i
k_1	A2 $\rightarrow$ A2P	1.2	1.1	1.0	1.0
k_2	A3 $\rightarrow$ A3P	0.9	0.9	1.1	1.1
k_3	A2P + Y3 $\rightarrow$ A2 + Y3P	1.0	1.0	1.0	1.0
k_{-3}	A2P + Y3 $\leftarrow$ A2 + Y3P	1.0	1.0	1.0	1.0
k_4	A2P + Y4 $\rightarrow$ A2 + Y4P	1.0	1.0	1.0	0.9
k_{-4}	A2P + Y4 $\leftarrow$ A2 + Y4P	0.9	1.0	1.0	1.0
k_5	A2P + Y6 $\rightarrow$ A2 + Y6P	3.9	1.6	0.8	0.2
k_6	A2P + B1 $\rightarrow$ A2 + B1P	0.6	0.8	1.2	2.7
k_{-6}	A2P + B1 $\leftarrow$ A2 + B1P	2.8	1.3	0.9	0.6
k_7	A2P + B2 $\rightarrow$ A2 + B2P	1.1	1.0	1.0	0.8
k_{-7}	A2P + B2 $\leftarrow$ A2 + B2P	1.0	1.0	1.0	1.1
k_8	A3P + Y6 $\rightarrow$ A3 + Y6P	1.1	1.0	1.0	1.0
k_{-8}	A3P + Y6 $\leftarrow$ A3 + Y6P	1.0	1.0	1.0	1.0
k_9	A3P + B2 $\rightarrow$ A3 + B2P	1.0	1.0	1.0	1.0
k_{-9}	A3P + B2 $\leftarrow$ A3 + B2P	1.1	1.1	1.0	0.9
k_{10}	Y3P $\rightarrow$ Y3	1.0	1.0	1.0	1.0
k_{11}	Y4P $\rightarrow$ Y4	1.0	1.0	1.0	0.9
k_{12}	Y6P $\rightarrow$ Y6	1.1	1.1	1.0	0.8
k_{13}	B1P $\rightarrow$ B1	1.0	1.0	1.0	1.0
k_{14}	B2P $\rightarrow$ B2	1.0	1.0	1.0	1.0
k_{15a}	Y6P + A3 $\rightarrow$ Y6 + A3	1.6	1.2	0.9	0.8
k_{15b}	Y6P + A3P $\rightarrow$ Y6 + A3P	1.0	1.0	1.0	1.0
A_{2T}	Total [CheA₂]	3.8	1.4	0.9	0.5
A_{3T}	Total [CheA ₃]	1.1	1.1	0.9	0.7
Y_{3T}	Total [CheY ₃]	1.0	1.0	1.0	1.1
Y_{4T}	Total [CheY ₄]	0.9	1.0	1.0	1.5
Y_{6T}	Total [CheY₆]	5.3	1.8	0.7	0.1
B_{1T}	Total [CheB₁]	0.7	0.9	1.1	3.6
B_{2T}	Total [CheB ₂]	1.1	1.0	1.0	0.8

* Values in bold indicate where a ≥ 2.5 fold change (up or down) has occurred