

<i>Parameter</i>	<i>Definition</i>	<i>Value</i>	<i>Reference</i>
$k_{in,pit}$	Influx rate constant for Pit transport system	15.4 mM/min	[1]
$K_{in,pit}$	Saturation constant for Pit transport	25 μ M	[1]
$k_{out,pit}$	Phosphate efflux rate	0.365 min ⁻¹	[1]
$k_{in,pst}$	Influx rate constant for Pst transport	67.05 min ⁻¹	[1]
$K_{in,pst}$	Saturation constant for Pst transport	0.4 μ M	[1]
K_i	Dissociation constant for regression complex	$4.3 \cdot 10^{-23}$ mM ³	[1]
k_{ra}	Rate constant for auto-phosphorylation of PhoB	$1 \cdot 10^5$ min ⁻¹	[1]
k_{ba}	Forward rate constant for phosphoryl transfer	759 mM ⁻¹ min ⁻¹	[1]
k_{-ba}	Reverse rate constant for phosphoryl transfer	759 mM ⁻¹ min ⁻¹	[1]
k'_{-ba}	Rate constant for auto-dephosphorylation of PhoB	0.043 min ⁻¹	[1]
k_{base}	Rate constant for basal transcription	$6.41 \cdot 10^{-7}$ mM/min	[1]
k_{pbase}	Rate constant for basal transcription (plasmid)	$2.5 \cdot 10^{-7}$ mM/min	[1]
k_{mRNA}	Rate constant for PhoB ^A induced transcription	$8.2 \cdot 10^{-5}$ mM/min	[1]
K_{Mpro}	Dissociation constant for Pho promoters	$4.9 \cdot 10^{-4}$ μ M	[1]
$[P_n]$ n=1,2,3,4	Concentration of Pho promoters	$1.66 \cdot 10^{-6}$ mM	[1]
$[DNA]$	Concentration of non-specific PhoB ^A binding sites	6.64 mM	[1]
K_{MDNA}	Dissociation constant for non-specific sites	30 mM	[1]
k_B, k_R, k_U, k_S	Rate constants for translation	13.66 min ⁻¹	[1]
$k_{dB}, k_{dR}, k_{dU}, k_{dS}$	Rate constants for enzyme degradation	0.07 min ⁻¹	[1]
k_{dRNA}	Rate constant for RNA degradation	0.46 min ⁻¹	[1]
μ_{max}	Maximum growth rate	0.0116 min ⁻¹	[1]
K_s	Monod constant for phosphate	0.004 mM	[1]
$Y'_{x/p}$	Yield coefficient of cells for phosphate	$3.69 \cdot 10^{12}$ cells mmol ⁻¹ P _i	[1]
k_{mS_V}	External mass transfer coefficient for phosphate	0.15 min ⁻¹	[1]
k_{dGFP}	Rate constant for gfp RNA degradation	0.00165 min ⁻¹	[2]

k_{dRFP}	Rate constant for rfp RNA degradation	0.00165 min^{-1}	[2]
k_{GFP}	Rate constant for gfp translation	0.24 min^{-1}	[5]
k_{RFP}	Rate constant for rfp translation	0.24 min^{-1}	[5]
$c1$	Maximal transcription rate for gfp mRNA	$1.67 \cdot 10^{-7} \text{ mM/min}$	[3]
K_{lacI}	LacI repressor dissociation constant	$8 \cdot 10^{-4} \text{ mM}$	[4]