

Symbol	Parameter	Value	Ref.
D_s	Glucose diffusion coefficient	$2.24 \times 10^{-10} \text{ m}^2 \cdot \text{s}^{-1}$	[1]
D_p	Lactate diffusion coefficient	$3.51 \times 10^{-10} \text{ m}^2 \cdot \text{s}^{-1}$	[1]
L_0	Initial biofilm thickness	$80 \mu\text{m}$	*
R_p	Penetration depth of glucose	$100 \mu\text{m}$	*
X	Cell density	$5 \text{ g} \cdot \text{l}^{-1}$	*
Y_{xs}	Yield coefficient of biomass on glucose	$0.5 (\text{g X})(\text{g s})^{-1}$	[5]
Y_{ps}	Yield coefficient of lactate on glucose	$0.9 (\text{g p})(\text{g s})^{-1}$	[5]
h_0	Characteristic length scale	$100 \mu\text{m}$	*
m	Turnover rate of gene	0.1 h^{-1}	*
s^0	Bulk concentration of glucose	$800 \text{ mg} \cdot \text{l}^{-1}$	†
t_0	Characteristic time scale	3600 s	*
μ_I	Specific growth rate coefficient	$0.001 \text{ h}^{-1} \cdot \text{mg}^{-1} \cdot \text{l}$	*
ρ_R	mRNA density	$6 \text{ g} \cdot \text{l}^{-1}$	*
σ	Biofilm detachment coefficient	$0.345 \text{ m}^{-1} \cdot \text{s}^{-1}$	*

Table S4: Parameter values for Acid Stress Response simulation. *: assumed, †: blood plasma concentration, other references are listed in **Text S1**.