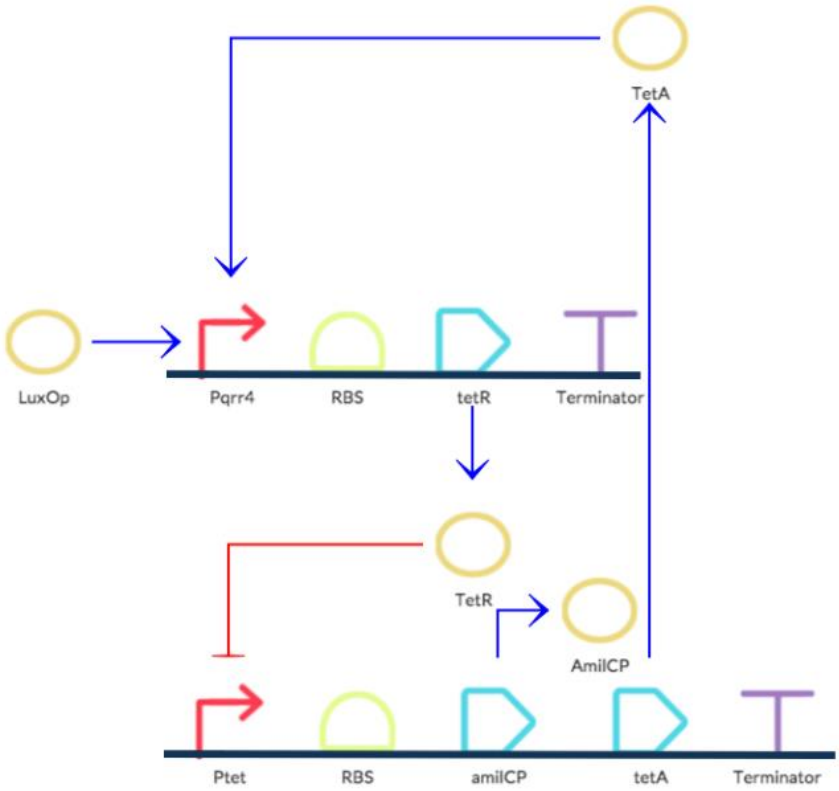
Reporter



Formulae for two certain parts

$$\frac{d[\mathrm{TetR}]}{dt} = \chi_{pqrr4} atr[\mathrm{tetR}^F] - \mathrm{d}[\mathrm{TetR}]$$

$$[\mathrm{tetR}^F] = [\mathrm{tetR}] \frac{[\mathrm{LuxOp}]^n}{h_0^n \chi_{pqrr4} + [\mathrm{LuxOp}]^n}$$

$$\frac{d[\mathrm{TetA}]}{dt} = \chi_{Ptet} atr[\mathrm{tetA}^F] - \mathrm{d}[\mathrm{TetA}]$$

$$[\mathrm{tetA}^F] = [\mathrm{tetA}] \frac{1}{1 + \chi_{Ptet_1} \left(\frac{TetR}{\beta_{TetR}} \right)}$$

$$\frac{d[\mathrm{AmilCP}]}{dt} = \chi_{Ptet}\, \mathrm{acp}[\mathrm{amilCP}] - \mathrm{d}[\mathrm{AmilCP}]$$

Parameter Table

Symbols	Parameters	Values and Units
a_{cs}	CqsS protein production rate	5 h^-1
k_{cc}	CAI and CqsS coupling rate	1 h^-1
k_{cd}	CAI and CqsS decoupling rate	1 h^-1
d_{CqsS}	CqsS protein decay rate	0.5 h^-1
d_{CqsSp}	CqsSp protein decay rate	1 h^-1
α_{U}	LuxU protein production rate	5 h^-1
β_{cu}	Phosphorylation rate of CqsS to LuxU	1 h^-1
k_{cu}	Michaelis Menten Constant for the phosphorylation CqsS-LuxU	2 nM
d_{LuxU}	LuxU protein decay rate	0.65 h^-1
d_{LuxUp}	LuxUp protein decay rate	0.12 h^-1
β_{uo}	Phosphorylation rate of LuxU to LuxO	3.2 h^-1
k_{uo}	Michaelis Menten Constant for the phosphorylation LuxU-LuxO	2 nM
d_{LuxOp}	LuxOp protein decay rate	0.12 h^-1
atr	TetR protein production rate	1 h^-1
acp	AmilCP protein production rate	1 h^-1
d_{TetR}	TetR protein decay rate	0.12 h^-1
h_0	LuxOp-DNA coupling rate	1.5 h^-1
n	Hill constant	3
d_{TetA}	TetA protein decay rate	0.12 h^-1
β_{TetR}	Maximum rate of TetR expression	5 h^-1

Reference: http://2014.igem.org/Team:Colombia