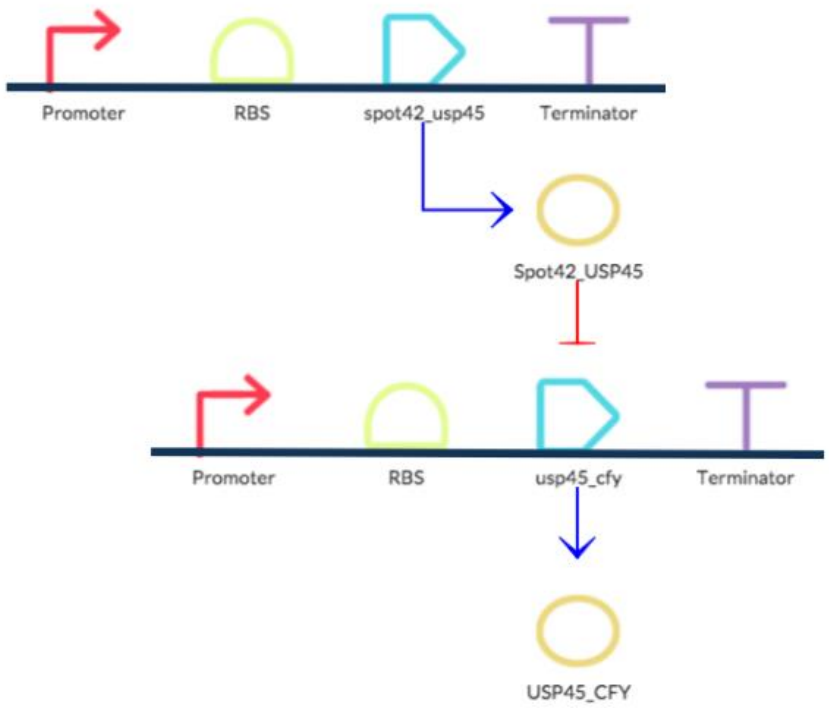
Kill switch-bacteriocin



Formulae for two certain parts

$$\frac{d[\text{Spot}\,42-USP45]}{dt}=\chi_{\text{Promoter}\_1}\alpha_{Spot\,42-USP45}[\text{spot}\,42-usp45]-\text{d}[\text{Spot}\,42-\text{USP}\,45]$$

$$\frac{d[USP45-CFY]}{dt}=\chi_{\text{Promoter}\_2}\alpha_{USP45-CFY}[\text{usp}\,45-cfy^{F}]-\text{d}[\text{USP}\,45-CFY]$$

$$[\text{usp}\,45-\text{cfy}^{F}]=[\text{usp}\,45-\text{cfy}]\frac{1}{1+\left(\frac{[\text{Spot}\,42-USP45]}{\beta_{\text{Spot}\,42-USP45}}\right)^{n_{\text{S pot}\,42-USP45}}}$$

Parameter Table

Symbols	Parameters	Values and Units
Beta_p	Production rate of OHHL	5.87 umol*min^-1
Eta_0	Degradation rate of OHHL	0.83 s^-1
Alpha_YenR	Translation rate of YenR	4.66 umol*min^-1
Beta_OHHL	Repression coefficient	2.5
n_OHHL	OHHL cooperativity coefficient	2
Alpha_Spot42_USP45	Translation rate of Spot42_USP45	3.21 umol*min^-1
d	Degradation rate of protein	0.742 s^-1
Alpha_USP45_CFY	Translation rate of USP45_CFY	3.93 umol*min^-1

Beta_spot42_USP45	spot42_USP45 repression coefficient	2.8
n_spot42_USP45	spot42_USP45 cooperativity coefficient	2

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