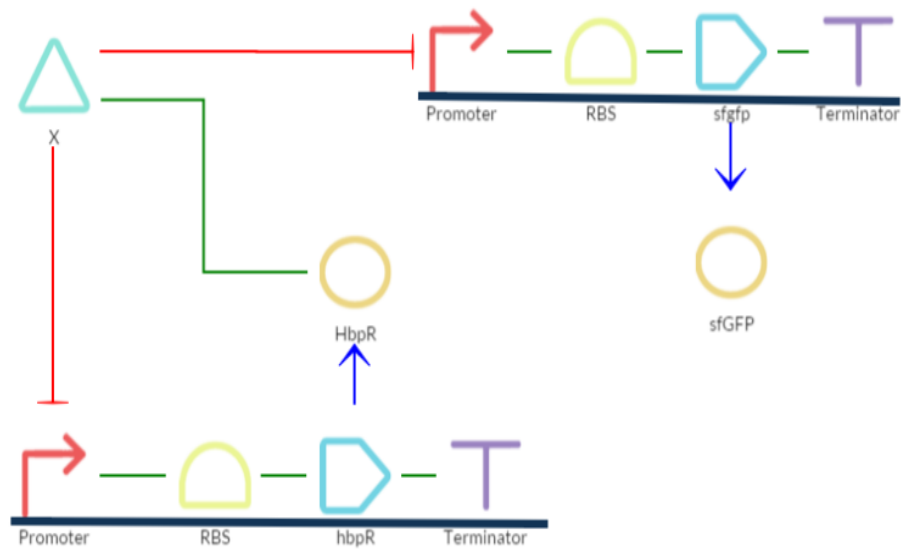


## Biosensor\_fine-tuning



### Formulae for two certain parts

HbpR and hbpR

$$\frac{d[\text{HbpR}]}{dt} = \chi_{\text{Promoter}_1} \alpha_{\text{HbpR}} [\text{hbpR}] - k_{\text{deg}} [\text{HbpR}]$$

SfGFP and sfGFP

$$\frac{d[\text{sfGFP}]}{dt} = \chi_{\text{Promoter}_2} \alpha_{\text{sfGFP}} [\text{sfGFP}^F] - k_{\text{deg}} [\text{sfGFP}]$$

$$[\text{sfGFP}^F] = [\text{sfGFP}] \frac{k_H}{k_H + [X_1]^{n_H}}$$

### Parameter Table

Symbols	Parameters	Values and Units
Alpha_HbpR	Translation rate of HbpR	0.005
Alpha_sfGFP	Translation rate of sfGFP	0.004
k_deg	Protein degradation rate	0.003
k_H	Repression coefficient	0.004
n_H	Cooperativity coefficient	1.7

**Reference:** <http://2013.igem.org/Team:Peking>