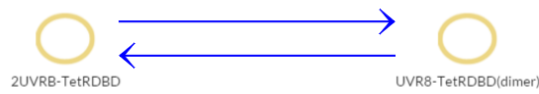


Biosensor-sun light



Formulae for two certain parts

$$\frac{d[\text{UVR8-TetR}_{DBD}^{\text{monomer}}]}{dt} = 2k_{hv}^{\text{UVR8}}[\text{UVR8-TetR}_{DBD}^{\text{dimerF}}] - 2k_{decay}^{\text{UVR8}}[\text{UVR8-TetR}_{DBD}^{\text{monomer}}]^2$$

$$[\text{UVR8-TetR}_{DBD}^{\text{dimerF}}] = [\text{UVR8-TetR}_{DBD}^{\text{dimer}}] \frac{1}{1 + \left(\frac{[\text{PABA}]}{KM_{PABA}} \right)^{n_{PABA}}}$$

$$\frac{d[\text{UVR8-TetR}_{DBD}^{\text{dimer}}]}{dt} = -k_{hv}^{\text{UVR8}}[\text{UVR8-TetR}_{DBD}^{\text{dimer}}] + k_{decay}^{\text{UVR8}}[\text{UVR8-TetR}_{DBD}^{\text{monomer}}]^2$$

Parameter Table

Symbols	Parameters	Values and Units
K_UVR8_hv	Light dependent dissociation rate UVR8 dimer	$2.08 \cdot 10^{-3} \text{ s}^{-1}$
K_UVR8_decay	Dimerization rate UVR8 monomer	$8.4 \cdot 10^{-10} \text{ nM}^{-1} \text{ s}^{-1}$
KM_PABA	PABA Michaelis constant	$960 \cdot 10^2 \text{ nM}$
n_PABA	PABA cooperativity coefficient	1

Reference: http://2012.igem.org/Team:ETH_Zurich