

<i>Reactions</i>	<i>Description</i>	<i>Rate and Value</i>
$\text{LTR}_{\text{OFF}} \leftrightarrow \text{LTR}_{\text{ON}}$	Promoter toggling from active to inactive state (basal transcription rate)	$k_{\text{ON}} = \text{variable}; k_{\text{OFF}} = \text{variable}$
$\text{LTR}_{\text{ON}} \rightarrow \text{mRNA} + \text{LTR}_{\text{ON}}$	Transcription of mRNA encoding Tat	$\alpha = 1$
$\text{mRNA} \rightarrow \text{mRNA} + \text{mCherry}$	Translation	$k_p = 10$
$*\text{mRNA} \rightarrow \text{mRNA} + \text{Tat}$	Translation	$k_p = 10$
$\text{Tat} + \text{LTR}_{\text{OFF}} \rightarrow \text{Tat} + \text{LTR}_{\text{ON}}$	Tat switching the LTR to 'ON' state	$k_{\text{TatON}} = \text{variable}$
$\text{mRNA} \rightarrow 0$	mRNA decay	$d_m = .043$
$\text{Tat} \rightarrow 0$	Tat decay	$d_m = .0024$
$\text{mCherry} \rightarrow 0$	mCherry decay	$d_p = 0.008$
$**\text{Tat}_{\text{init}}$	Steady-state Tat input; for open-loop simulations	Variable (0-10,000)