Reactions	Description	Rate and Value
$LTR_{OFF} \leftrightarrow LTR_{ON}$	Promoter toggling from active to inactive state (basal transcription rate)	k_{on} = variable; k_{off} = variable
$LTR_{ON} \rightarrow mRNA + LTR_{ON}$	Transcription of mRNA encoding Tat	$\alpha = 1$
$mRNA \rightarrow mRNA + mCherry$	Translation	$k_p = 10$
$*mRNA \rightarrow mRNA + Tat$	Translation	$k_p = 10$
$Tat + LTR_{ON} \leftrightarrow Tat\text{-}LTR_{ON}$	Tat switching between the Tat-dependent and Tat-independent 'ON' state	$kTatbind$ = variable $kTatOFF$ = variable
$Tat\text{-}LTR_{ON} \rightarrow Tat\text{-}LTR_{ON} + mRNA$	Transcription from Tat-activated state	$\alpha = 1$
$mRNA \rightarrow 0$	mRNA decay	$d_m = .043$
$Tat \rightarrow 0$	Tat decay	$d_m = .0024$
$mCherry \rightarrow 0$	mCherry decay	$d_p = 0.008$
$**Tat_{init}$	Steady-state Tat input; for open-loop simulations	Variable (0-10,000)