Table S1. Chemical Reaction Scheme (with Parameters) for Stochastic Simulations of Two-State Tat Positive-Feedback Model, Related to Figure 3

Reactions	***Description***	***Rate and Value***
$LTR_{OFF} \leftrightarrow LTR_{ON}$	Promoter toggling from active to inactive state (basal transcription rate)	k_{on} = varied; $k_{off} = 0.01$ (for Fig. 3B $k_{on} = 0.0001$)
$LTR_{ON} \rightarrow mRNA + LTR_{ON}$	Transcription of mRNA encoding Tat	$k_m = 1$
$mRNA \rightarrow mRNA + Tat$	Translation	$k_p = 10$
$Tat + LTR_{ON} \leftrightarrow LTR_{ON\text{-}Tat}$	Tat binding/unbinding to LTR (TAR)	$k_{bind} = .01$; $k_{unbind} = .01$
$LTR_{ON\text{-}Tat} \rightarrow LTR_{ON\text{-}Tat} + mRNA$	Transactivated rate of transcription	$k_{transact} = 5$ (varied in Fig. S2J)
$mRNA \rightarrow \otimes$	mRNA decay	$\delta_m = 1$
$Tat \rightarrow \otimes$	Tat decay	$\delta_p = 0.125$ (based on 8-hr t_{avg})

*Initial conditions for all species except LTR_{ON} were set to zero ($LTR_{ON} = 1$ at $t = 0$)