

Simulation parameters for Fig. 6 (including Figure supplement)

Parameter	Value	Note
Stall site identity	CTA, CTC	
Stall site locations (codon number along <i>yfp</i>)	60 (8),64 (9), 68 (10), 119 (11), 125 (12), 137 (13), 141 (14)	Different combinations of these sites as indicated along X-axis.
tRNA accommodation rate at CTC68 (TJ model)	0.226s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC119 (TJ model)	0.199s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC125 (TJ model)	0.205s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC137 (TJ model)	0.236s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC141 (TJ model)	0.273s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC60 (TJ model)	0.228s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC64 (TJ model)	0.214s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC68 (CSAT model)	0.468s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC119 (CSAT model)	0.387s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC125 (CSAT model)	0.394s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC137 (CSAT model)	0.512s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC141 (CSAT model)	0.777s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC60 (CSAT model)	0.483s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC64 (CSAT model)	0.433s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC68 (SAT model)	2.17s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC119 (SAT model)	1.71s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC125 (SAT model)	1.67s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC137 (SAT model)	2.51s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC141 (SAT model)	4.26s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC60 (SAT model)	2.15s ⁻¹	Fit from experiment
tRNA accommodation rate at CTC64 (SAT model)	1.85s ⁻¹	Fit from experiment

Continued on next page

Continued from previous page					
Parameter				Value	Note
tRNA accommodation rate at CTA68 (CSAT model)				0.0103s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA119 (CSAT model)				0.0146s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA125 (CSAT model)				0.0158s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA137 (CSAT model)				0.0159s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA141 (CSAT model)				0.0183s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA60 (CSAT model)				0.0183s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA64 (CSAT model)				0.012s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA68 (TJ model)				0.00825s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA119 (TJ model)				0.0112s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA125 (TJ model)				0.0113s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA137 (TJ model)				0.0116s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA141 (TJ model)				0.0127s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA60 (TJ model)				0.013s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA64 (TJ model)				0.00923s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA68 (SAT model)				0.0348s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA119 (SAT model)				0.0463s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA125 (SAT model)				0.0529s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA137 (SAT model)				0.0517s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA141 (SAT model)				0.0607s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA60 (SAT model)				0.0672s ⁻¹	Fit from experiment
tRNA accommodation rate at CTA64 (SAT model)				0.0408s ⁻¹	Fit from experiment

All other parameters have values shown in Supplementary File 6.