

Parameters common to all simulations

Parameter	Value	Units	Reference
Cell volume	$10^{-18}$	$\text{m}^{-3}$	<i>Bremer and Dennis (1996); Elf et al. (2003)</i>
Cell doubling time	30	min	This work
Concentration of tRNAs	$4.08 \times 10^5$	molecules/cell	<i>Bremer and Dennis (2008)</i>
Rate of peptide-bond formation and translocation	$\approx 22$ (1/0.045)	$\text{s}^{-1}$	<i>Bremer and Dennis (2008)</i>
tRNA accommodation rate at normal sites (not stall sites)	80–1650	$\text{s}^{-1}$	Inferred (Methods)
Ribosome footprint size on mRNAs	10	codons	This work
Number of distinct mRNA species	2	No units	This work
Ribosome-tRNA association rate constant	$2 \times 10^7$	$\text{M}^{-1} \text{s}^{-1}$	<i>Bilgin and Ehrenberg (1994); Pavlov and Ehrenberg (1996)</i>
tRNA aminoacylation rate constant	$2 \times 10^{10}$	$\text{M}^{-1} \text{s}^{-1}$	This work
Threshold tRNA accommodation rate for selective abortive termination	22	$\text{s}^{-1}$	This work
Abortive termination rate constant (SAT and CSAT models)	1	$\text{s}^{-1}$	This work
Abortive termination rate constant (TJ model)	0	$\text{s}^{-1}$	This work
Translation initiation rate	0.3	$\text{s}^{-1}$	This work

## References

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