

**Table I.** Parameters varied for Latin hypercube sampling

Parameter	Description <sup>1</sup>	Default	Range	Distribution	Varied in focused analysis?
$\alpha_{Bi}$	Intracellular Mtb growth rate (per 10 minutes)	0.0015	[0.0002, 0.002]	Uniform	No
$\alpha_{Be}$	Extracellular Mtb growth rate (per 10 minutes)	0.0007	[0.00015, 0.015]	Log-Uniform	No
$p_k$	Probability of $M_r$ killing bacteria	0.0187	[0.01, 0.1]	Uniform	No
$T_{actm}$	Probability of $M_i$ activation by $T_\gamma$	0.03	[0.0001, 0.1]	Log-Uniform	No
$M_{recr}$	Probability of macrophage recruitment	0.04	[0.01, 0.1]	Uniform	No
$T_{recr}$	Probability of T cell recruitment	0.09	[0.01, 0.1]	Uniform	No
$T_{move}$	Prob of a T cell moving onto an occupied micro-compartment	0.02	[0.00001, 0.1]	Log-Uniform	No
$T_{rrecr}$	Proportion of $T_{reg}$ cells out of all T cells recruited	0.1	[0.01, 0.2]	Uniform	No
$\lambda_c$	Chemokine diffusion rate (cm <sup>2</sup> per 0.1 minutes)	$6.27 \times 10^{-7}$	$[1, 7] \times 10^{-7}$	Uniform	No
$\delta_c$	Chemokine degradation rate (per 0.1 minutes)	0.000916	[0.0005, 0.0015]	Uniform	No
$r_T$	Combined TNF/chemokine threshold for T cell recruitment at a vascular source <sup>2</sup>	1,767	$[0.1, 10] \times 10^4$	Log-Uniform	No
$r_M$	Combined TNF/chemokine threshold for $M_r$ recruitment at a vascular source <sup>2</sup>	6,507	$[0.1, 10] \times 10^4$	Log-Uniform	No
$s_{c5}$	CCL5 production rate (molecules per 10 minutes)	$3.55 \times 10^6$	$[1, 10] \times 10^6$	Uniform	No
$s_{5m}$	Macrophage CCL5 saturation threshold (molecules)	$5.79 \times 10^6$	$[1, 100] \times 10^6$	Log-Uniform	No
$\tau_{5m}$	Macrophage CCL5 threshold (molecules)	$2 \times 10^4$	$[1, 100] \times 10^4$	Log-Uniform	No

**Table 1.** (continued) Parameters varied for Latin hypercube sampling.

Parameter	Description <sup>1</sup>	Default	Range	Distribution	Varied in focused analysis?
$\lambda_{TNF}$	TNF diffusion rate (cm <sup>2</sup> per 0.1 minutes)	$6.56 \times 10^{-7}$	$[1, 7] \times 10^{-7}$	Uniform	Yes
$\delta_{TNF}$	TNF degradation rate (per 0.1 minutes)	0.0005	[0.0001, 0.001]	Uniform	Yes
$s_{TNF}$	TNF production rate (molecules per 10 minutes)	$1.80 \times 10^5$	$[1, 100] \times 10^4$	Log-Uniform	Yes
$p_{apopt}$	Probability of TNF-induced apopt per 10 minute interval	0.04	[0.001, 0.2]	Uniform	Yes
$\tau_{TNF}$ <sup>3</sup>	Macrophage TNF detection threshold (molecules)	$10 \times 10^5$	$[1, 15] \times 10^5$	Uniform	Yes
$r_{MTNF}$	Effect of TNF on M, recruitment <sup>2</sup>	676	[10, 1000]	Log-Uniform	Yes

<sup>1</sup>All probabilities are per 10 minute interval.

<sup>2</sup>Non-dimensional; c.f. II.3.iv-v. of the Agent-Based Model Rules (Supplement 1).

<sup>3</sup> $\tau_{TNF}$  was divided into separate thresholds for activation ( $\tau_{TNFact}$ ) and apoptosis ( $\tau_{TNFapopt}$ ) in the focused analysis.