

## Supplementary Material

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Name	Description
$p$	proliferation rate of tissue cells
$d_C$	death rate of tissue cells
$\Delta_{\text{MIE}}$	mesenchymal immune evasion
$\Delta_{\text{MGA}}$	mesenchymal growth arrest
$\Delta_A$	mutant cells decreased apoptosis
$\Delta_{\text{IE}}$	mutant cells increased immune evasion
$\Delta_P$	mutant cells increased proliferation
$K_0$	EC50 term for negative feedback of tissue cells on own proliferation
$K_1$	EC50 term for probability of NK cell finding mutant cell
$K_2$	EC50 term for Treg inhibition of cytotoxic functions
$K_3$	EC50 term for how much TGF- $\beta$ each cell has
$E_{\text{NK}}$	rate of NKs clearing mutants
$E_{\text{CTL}}$	rate of CTLs clearing mutants
$\sigma_{\text{NK}}$	NK source rate
$\sigma_{\text{CTL}}$	CTL source rate per cleared mutant cell
$\sigma_{\text{Treg}}$	Treg source rate per cleared mutant cell
$k_{\text{EMT}}$	EMT/MET rate
$\sigma$	standard deviation of noise in TGF- $\beta$ each cell receives
$\tau_{\text{max}}$	max amount of TGF- $\beta$ any cell can receive
$\tau_{\text{MUT}}$	rate of TGF- $\beta$ production by mutant cells
$\tau_{\text{Treg}}$	rate of TGF- $\beta$ production by Treg

Table 1: The model parameter names and descriptions. Note that many of these values are affected by the inflammation state of the system.

Name	Description	INFL Low Value	INFL High Value
$p$	proliferation rate of tissue cells	0.28	
$d_C$	death rate of tissue cells	0.14	
$\Delta_{\text{MIE}}$	MIE	0.6	
$\Delta_{\text{MGA}}$	MGA	0.2	
$\Delta_A$	mutant cells decreased apoptosis	0.3	
$\Delta_{\text{IE}}$	mutant cells increased immune evasion	0.48	
$\Delta_P$	mutant cells increased proliferation	0.36	
$K_0$	EC50 term for negative feedback of tissue cells on own proliferation	80	
$K_1$	EC50 term for probability of NK cell finding mutant cell	8	
$K_2$	EC50 term for Treg inhibition of cytotoxic functions	5	0.025
$K_3$	EC50 term for how much TGF- $\beta$ each cell has	200	
$E_{\text{NK}}$	rate of NKs clearing mutants	10	30
$E_{\text{CTL}}$	rate of CTLs clearing mutants	200	600
$\sigma_{\text{NK}}$	NK source rate	1.3	
$\sigma_{\text{CTL}}$	CTL source rate per cleared mutant cell	100	
$\sigma_{\text{Treg}}$	Treg source rate per cleared mutant cell	200	
$k_{\text{EMT}}$	EMT/MET rate	0.01	
$\sigma$	standard deviation of noise in TGF- $\beta$ each cell receives	6	
$\tau_{\text{max}}$	max amount of TGF- $\beta$ any cell can receive	500	
$\tau_{\text{MUT}}$	rate of TGF- $\beta$ production by mutant cells	0.05	
$\tau_{\text{Treg}}$	rate of TGF- $\beta$ production by Treg	0.5	
	RP Cancer Line	0.5	
	INFL High Duration	30	
	INFL Low Duration	30	
	Mes Threshold	0.7	
	maximum initial mutation damage after warmup	0.01	
	increase in probability to mutate for non-mutating proliferating cells	0.0001	

Table 2: The model parameter names, descriptions, and values during both low and high inflammation. Parameters with only one value do not change with the inflammatory state.