

S3 Table. Parameters for diffusible biochemical fields.

Parameter	Value	Eq.	Source
$D_{\alpha,\alpha}$: diffusion coefficient for 1 st inflammatory wave	0.075 mm ² /h	3	Assumed = $D_{c,c}$
d_α : decay coefficient for 1 st inflammatory wave	0.01 1/h	4	Assumed = d_c
$D_{c,c}$: diffusion coefficient for 2 nd inflammatory wave	0.075 mm ² /h	3	Ref. [1]
d_c : decay coefficient for 2 nd inflammatory wave	0.01 1/h	5	Ref. [1]
$p_{c,\alpha}$: effect of 1 st inflammation on 2 nd inflammation	0.23 1/h	5	Selected to match peak in c
$p_{c,\rho}$: effect of cell proliferation on 2 nd inflammation	1.5 1/h	5	Ref. [2]
c_{tgt} : attractor for 2 nd inflammation	1.01	5	From c homeostasis ($s_c = 0$)
$K_{c,c}$: self-saturation of 2 nd inflammatory wave	0.5	5	Assumed
$D_{\rho,\rho}$: diffusion coefficient for cell population	0.035 mm ² /h	3	Ref. [1]
$D_{\rho,c}$: chemotactic diffusion coefficient for cells	8×10^{-5} mm ² /h	3	Ref. [1]
$p_{\rho,n}$: baseline cell mitotic rate for $c = 0$ and $\hat{H}_\rho = 0$	0.034 1/h	6	Ref. [1]
Ω_ρ^b : enhanced cell proliferation due to inflammation	5	6	Selected to match peak in ρ
Ω_ρ^m : enhanced cell proliferation due to mechanics	0.01 (Range: 0 – 0.8)	6	Ref. [3], varied in Figs. 7-8
d_ρ : decay coefficient for cell population	0.048 1/h (0.048 – 0.061 1/h)	6	From ρ homeostasis ($s_\rho = 0$)
γ^e : slope of the function $\hat{H}(\theta^e, \vartheta^{ph}, \gamma^e)$	5	10	Ref. [1]
γ^{k_1} : slope of the function $\hat{H}(c, k_1^c, k_1^{ph}, \gamma^{k_1})$	0.016	19	Assumed
$K_{\rho,\rho}$: self-saturation of cell population	30	6	Selected to match peak in ρ
$K_{\rho,c}$: saturation of cell population due to inflammation	10	6	Selected to match peak in ρ
$f_{\rho,n}$: baseline active tension for $\rho = 1$ and $c = 0$	0.04 MPa/mm ³	11	Ref. [1]
$K_{f,c}$: saturation of active tension due to inflammation	10^{-5}	11	Ref. [1]
Ω_f^b : increase of active tension due to inflammation	1	11	Ref. [1]

References

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3. Yang G, Crawford RC, Wang JH. Proliferation and collagen production of human patellar tendon fibroblasts in response to cyclic uniaxial stretching in serum-free conditions. Journal of biomechanics. 2004;37(10):1543–1550.