$$\partial_t C_U(r,z,t) = \underbrace{\alpha_1 S_A \frac{P}{\lambda_P + P}}_{S_A \xrightarrow{\text{EPO}} C_U} + \underbrace{\alpha_2 H(P - P_c) C_E}_{C_E \xrightarrow{\text{EPO}} C_U} - \underbrace{\beta_{13} C_U \frac{M}{\lambda_M + M}}_{C_U \xrightarrow{\text{DAMPs}} C_T} - \underbrace{\Gamma(\epsilon, r, z, U) C_U}_{C_U \xrightarrow{\text{chronic strain}} D_N}, \quad \text{(3a)}$$

$$\partial_t C_T(r,z,a,t) + \partial_a C_T(r,z,a,t) = \underbrace{-\beta_{11} \frac{M}{\lambda_M + M} H(P_c - P) C_T(r,z,a,t)}_{C_T \xrightarrow{\text{DAMPs}} S_T}$$
$$\underbrace{-\beta_{12} \frac{F}{\lambda_F + F} H(P_c - P) C_T(r,z,a,t)}_{C_T \xrightarrow{\text{PIC}} S_T}$$
$$\underbrace{-\kappa_1 \gamma(a - \tau_2) C_T(r,z,a,t)}_{C_T \to C_E} \underbrace{-\Gamma(\epsilon, r, z, U) C_T(r,z,a,t)}_{C_T \xrightarrow{\text{chronic strain}} D_N}, \quad \text{(3b)}$$

$$\partial_t C_E(r,z,t) = \underbrace{\int_0^\infty \kappa_1 \gamma(a - \tau_2) C_T(r,z,a,t) da}_{C_T \xrightarrow{\tau_2 \text{ delay}} C_E} - \underbrace{\alpha_2 H(P - P_c) C_E}_{C_E \xrightarrow{\text{EPO}} C_U} - \underbrace{\Gamma(\epsilon, r, z, U) C_E}_{C_E \xrightarrow{\text{chronic strain}} D_N}. \quad \text{(3c)}$$

with initial conditions

$$C_U(r,z,0) = 100{,}000 \text{ cells/cm}^2. \quad \text{(3d)}$$

$$C_T(r,z,0,t) = \underbrace{\beta_{13} C_U \frac{M}{\lambda_M + M}}_{C_U \xrightarrow{\text{DAMPs}} C_T}, \quad \text{(3e)}$$

$$C_T(r,z,a,0) = C_E(r,z,0) = 0. \quad \text{(3f)}$$