$$\frac{d[R]}{dt} = P_3 + P_1\left(\frac{1}{1+([R]/K_R)^{n_R}}\right)\left(\frac{([A]/K_A)^{n_A}}{1+([A]/K_A)^{n_A}}\right) - D_R[R] - K_{on(RI)}[R][I] - K_{on(RL)}[R][L]$$

$$\frac{d[I]}{dt} = P_1\left(\frac{1}{1+([R]/K_R)^{n_R}}\right)\left(\frac{([A]/K_A)^{n_A}}{1+([A]/K_A)^{n_A}}\right) - D_I[I] - K_{on(RI)}[R][I]$$

$$\frac{d[L]}{dt} = P_L\frac{1}{1+([R]/K_R)^{n_R}} - D_L[L] - K_{on(RL)}[R][L]$$