

$$\frac{dR}{dt} = [k'_0 + \kappa_0 E_P(R)] \cdot X - \kappa_2 R$$

$$\frac{dX}{dt} = \kappa_1 S - [k'_0 + \kappa_0 E_P(R)] \cdot X$$

$$E_P(R) = G(\kappa_3 R, \kappa_4, J_3, J_4)$$