

$$\frac{d[X]}{dt} = (\mu_1 + \mu_2 + \mu_3) * [X] - \frac{Fe}{V}[X]$$

$$\frac{d[S]}{dt} = -(\mu_1 + k_2 \mu_2) [X] + \frac{Fe}{V}[S_e] - \frac{Fe}{V}[S]$$

$$\frac{d[A]}{dt} = (k_3 \mu_2 - k_4 \mu_3) [X] - \frac{Fe}{V}[A]$$

$$\frac{d[P]}{dt} = k_{11} \mu_1 [X] - \frac{Fe}{V}[P]$$

$$\frac{d[V]}{dt} = 0$$