

Stationary points of 2-Compartment-Model

$$\frac{dS_1}{dt} = v_0 - v_{max} \frac{S_1}{K_M + S_1} \quad (1)$$

$$\frac{dS_2}{dt} = v_{max} \frac{S_1}{K_M + S_1} - k_2 \cdot S_2 \quad (2)$$

$$\frac{dS_2}{dt} = 0 \quad (3)$$

$$\Rightarrow S_2 = \frac{v_{max} S_1}{(K_M + S_1) \cdot k_2} \quad (4)$$

$$\frac{dS_1}{dt} = 0 \quad (5)$$

$$\Rightarrow S_1 = \frac{v_0 \cdot K_M}{v_0 - v_{max}} \quad (6)$$

$$\Rightarrow S_2 = \frac{v_0}{k_2} \quad (7)$$

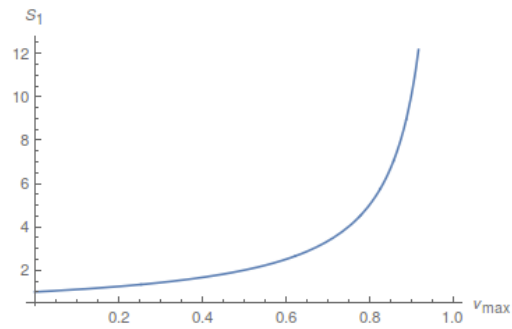


Figure 1: Stationary point S_1^* against v_{max} .

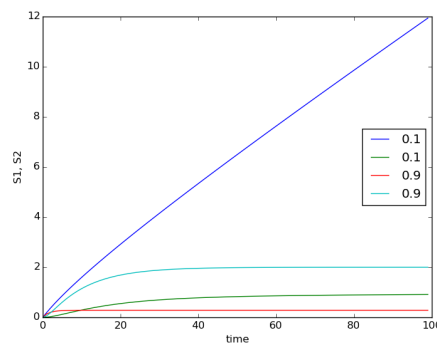


Figure 2: (S_1 and S_2 for $v_{max} = 0.1$ and 0.9 .)