

$$\frac{dS_i}{dt} = c_i E_i(\mathbf{S}) \cdot N - \delta_i \cdot S_i - m \cdot S_i \quad (2)$$

Loss of signal due to mass transfer

Loss of signal due to chemical decay

Production of signal proportional to per capita expression of synthase, multiplied by density N ; synthase expression a function of all signal concentrations \mathbf{S}

Change in concentration over time for signal i , where i is 3-oxo-C₁₂-HSL, C₄-HSL