

$$\dot{\mathbf{x}} = \underbrace{\begin{pmatrix} k_t B_{max} - k_t x_1 - k_{on} x_1 x_2 + k_{off} x_3 + k_{ex} x_4 \\ -k_{on} x_1 x_2 + k_{off} x_3 + k_{ex} x_4 \\ k_{on} x_1 x_2 - k_{off} x_3 - k_e x_3 \\ k_e x_3 - k_{ex} x_4 - k_{di} x_4 - k_{de} x_4 \\ k_{di} x_4 \\ k_{de} x_4 \end{pmatrix}}_{\mathbf{f}(\mathbf{x}, \mathbf{u})}$$

EpoR  
 Epo  
 Epo-EpoR  
 Epo-EpoR<sub>i</sub>  
 dEpo<sub>i</sub>  
 dEpo<sub>e</sub>

$$\mathbf{y} = \underbrace{\begin{pmatrix} \kappa_1 (x_2 + 2x_6) \\ \kappa_2 (x_3) \\ \kappa_3 (x_4 + x_5) \end{pmatrix}}_{\mathbf{h}(\mathbf{x})}$$

Epo + dEpo<sub>i</sub>  
 Epo-EpoR  
 Epo-EpoR<sub>i</sub> + dEpo<sub>i</sub>

