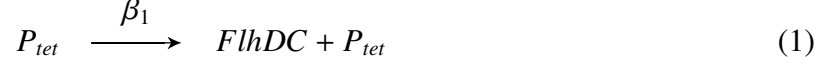
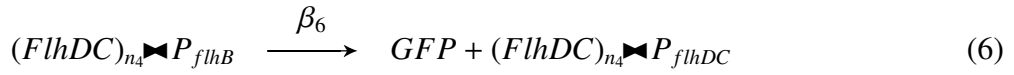
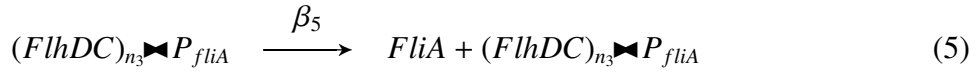
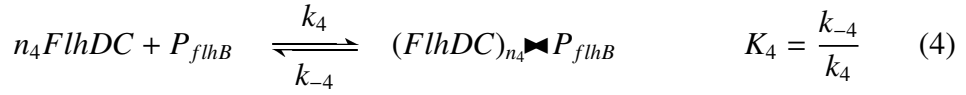
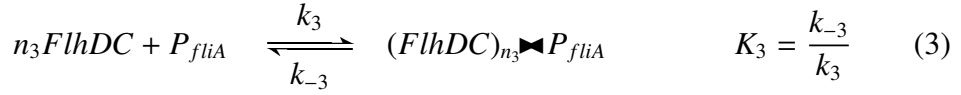


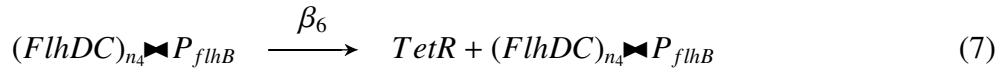
specific to  $P_{tet}$ -circuit



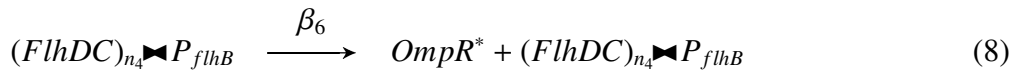
specific to  $P_{flhDC}$ -circuit

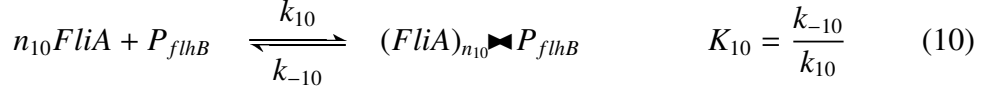
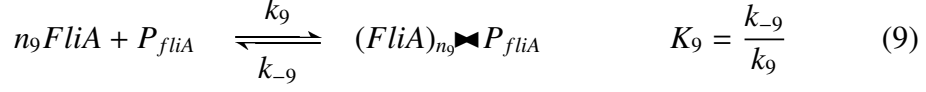


specific to  $P_{tet}$ -circuit

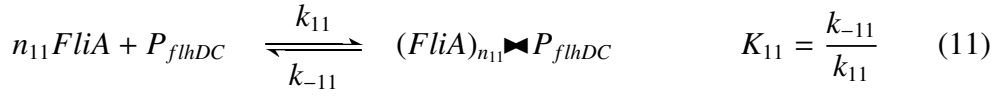


specific to  $P_{flhDC}$ -circuit

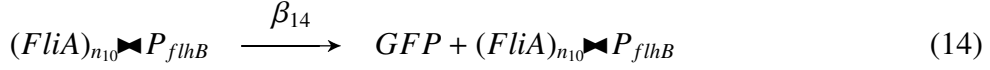
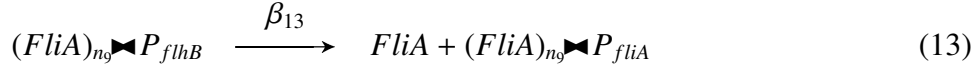
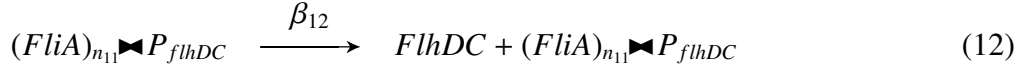




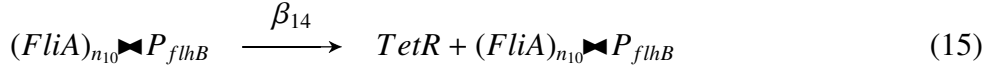
specific to  $P_{\text{flhDC}}$ -circuit



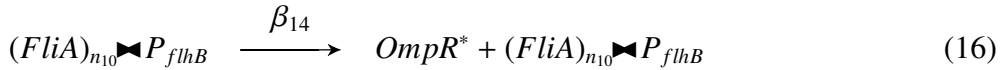
specific to  $P_{\text{flhDC}}$ -circuit



specific to  $P_{\text{tet}}$ -circuit



specific to  $P_{\text{flhDC}}$ -circuit

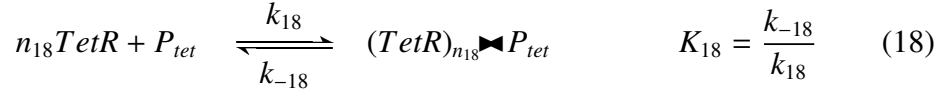


specific to  $P_{\text{tet}}$ -circuit

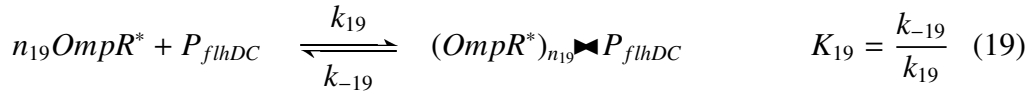


---

specific to  $P_{tet}$ -circuit



specific to  $P_{flhDC}$ -circuit



specific to  $P_{tet}$ -circuit



specific to  $P_{flhDC}$ -circuit



$$(3) \Rightarrow \frac{d[(FlhDC)_{n_3} \blacktriangleright P_{fliA}]}{dt} = k_3[FlhDC]^{n_3}[P_{fliA}] - k_{-3}[(FlhDC)_{n_3} \blacktriangleright P_{fliA}] \quad (25)$$

$$\Rightarrow [(FlhDC)_{n_3} \blacktriangleright P_{fliA}]_{eq} = \frac{[FlhDC]^{n_3}}{K_3 + [FlhDC]^{n_3}} \cdot [P_{fliA}^{total}] \quad (26)$$


---

$$(4) \Rightarrow \frac{d[(FlhDC)_{n_4} \blacktriangleright P_{flhB}]}{dt} = k_4 [FlhDC]^{n_4} [P_{flhB}] - k_{-4} [(FlhDC)_{n_4} \blacktriangleright P_{flhB}] \quad (27)$$

$$\Rightarrow [(FlhDC)_{n_4} \blacktriangleright P_{flhB}]_{eq} = \frac{[FlhDC]^{n_4}}{K_4 + [FlhDC]^{n_4}} \cdot [P_{flhB}^{total}] \quad (28)$$


---

$$(9) \Rightarrow \frac{d[(FliA)_{n_9} \blacktriangleright P_{fliA}]}{dt} = k_9 [FliA]^{n_9} [P_{fliA}] - k_{-9} [(FliA)_{n_9} \blacktriangleright P_{fliA}] \quad (29)$$

$$\Rightarrow [(FliA)_{n_9} \blacktriangleright P_{fliA}]_{eq} = \frac{[FliA]^{n_9}}{K_9 + [FliA]^{n_9}} \cdot [P_{fliA}^{total}] \quad (30)$$


---

$$(10) \Rightarrow \frac{d[(FliA)_{n_{10}} \blacktriangleright P_{flhB}]}{dt} = k_{10} [FliA]^{n_{10}} [P_{flhB}] - k_{-10} [(FliA)_{n_{10}} \blacktriangleright P_{flhB}] \quad (31)$$

$$\Rightarrow [(FliA)_{n_{10}} \blacktriangleright P_{flhB}]_{eq} = \frac{[FliA]^{n_{10}}}{K_{10} + [FliA]^{n_{10}}} \cdot [P_{flhB}^{total}] \quad (32)$$


---

specific to  $P_{flhDC}$ -circuit

$$(11) \Rightarrow \frac{d[(FliA)_{n_{11}} \blacktriangleright P_{flhDC}]}{dt} = k_9 [FliA]^{n_{11}} [P_{flhDC}] - k_{-11} [(FliA)_{n_{11}} \blacktriangleright P_{flhDC}] \quad (33)$$

$$\Rightarrow [(FliA)_{n_{11}} \blacktriangleright P_{flhDC}]_{eq} = \frac{[FliA]^{n_{11}}}{K_{11} + [FliA]^{n_{11}}} \cdot [P_{flhDC}^{total}] \quad (34)$$


---

specific to  $P_{tet}$ -circuit

$$(18) \Rightarrow \frac{d[P_{tet}]}{dt} = -k_{18} [TetR] [P_{tet}] + k_{-18} [(TetR)_{n_{18}} \blacktriangleright P_{tet}] \quad (35)$$

$$\Rightarrow [P_{tet}]_{eq} = \frac{K_{18}}{K_{18} + [TetR]^{n_{18}}} \cdot [P_{tet}^{total}] \quad (36)$$

specific to  $P_{tet}$ -circuit

$$(17) \Rightarrow \frac{d[TetR]}{dt} = -k_{17}[TetR][aTc] + k_{-17}[aTc] \blacktriangleright [TetR] \quad (37)$$

$$\Rightarrow [TetR]_{eq} = \frac{K_{17}}{K_{17} + [aTc]} \cdot [TetR^{produced}] \quad (38)$$

specific to  $P_{flhDC}$ -circuit

$$(19) \Rightarrow \frac{d[P_{flhDC}]}{dt} = -k_{19}[OmpR^*] \blacktriangleright [HSL]^{n_{19}} [P_{flhDC}] + k_{-19}[(OmpR^*)_{n_{19}}] \blacktriangleright [P_{flhDC}] \quad (39)$$

$$\Rightarrow [P_{flhDC}]_{eq} = \frac{K_{19}}{K_{19} + [OmpR^*]^{n_{19}}} \cdot [P_{flhDC}^{total}] \quad (40)$$

specific to  $P_{tet}$ -circuit

$$(1) \text{ and } (38) \text{ and } (20) \Rightarrow \frac{d[FlhDC]}{dt} = \beta_1 [P_{tet}]_{eq} - \gamma_{20} [FlhDC] \quad (41)$$

specific to  $P_{flhDC}$ -circuit

$$(2) \text{ and } (40) \text{ and } (12) \text{ and } (34) \text{ and } (20) \Rightarrow \frac{d[FlhDC]}{dt} = \beta_2 [P_{flhDC}]_{eq} + \beta_{12} [(FlhA)_{n_{11}}] \blacktriangleright [P_{flhDC}]_{eq} - \gamma_{20} [FlhDC] \quad (42)$$

$$\begin{aligned}
(5)\text{and}(26)\text{and}(13)\text{and}(30)\text{and}(21) \Rightarrow \frac{d[FlhA]}{dt} = & \beta_5[(FlhDC)_{n_3} \blacktriangleright P_{fliA}]_{eq} \\
& + \beta_5[(FlhA)_{n_9} \blacktriangleright P_{fliA}]_{eq} \\
& - \gamma_{21}[FlhA]
\end{aligned} \tag{43}$$


---

$$\begin{aligned}
(6)\text{and}(27)\text{and}(14)\text{and}(31)\text{and}(22) \Rightarrow \frac{d[GFP]}{dt} = & \beta_6[(FlhDC)_{n_4} \blacktriangleright P_{flhB}]_{eq} \\
& + \beta_{14}[(FlhA)_{n_{10}} \blacktriangleright P_{flhB}]_{eq} \\
& - \gamma_{22}[GFP]
\end{aligned} \tag{44}$$


---

specific to  $P_{tet}$ -circuit

$$\begin{aligned}
(7)\text{and}(28)\text{and}(15)\text{and}(32)\text{and}(23) \Rightarrow \frac{d[TetR]}{dt} = & \beta_6[(FlhDC)_{n_4} \blacktriangleright P_{flhB}]_{eq} \\
& + \beta_{14}[(FlhA)_{n_{10}} \blacktriangleright P_{flhB}]_{eq} \\
& - \gamma_{23}[TetR]
\end{aligned} \tag{45}$$


---

specific to  $P_{flhDC}$ -circuit

$$\begin{aligned}
(8)\text{and}(28)\text{and}(16)\text{and}(32)\text{and}(24) \Rightarrow \frac{d[OmpR^*]}{dt} = & \beta_6[(FlhDC)_{n_4} \blacktriangleright P_{flhB}]_{eq} \\
& + \beta_{14}[(FlhA)_{n_{10}} \blacktriangleright P_{flhB}]_{eq} \\
& - \gamma_{23}[OmpR^*]
\end{aligned} \tag{46}$$