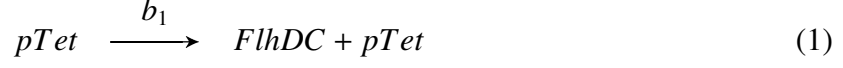
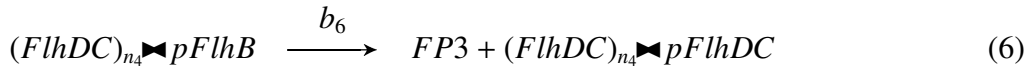
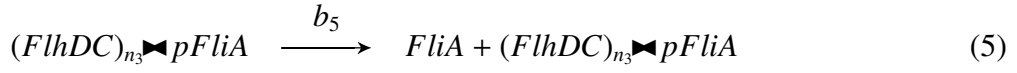
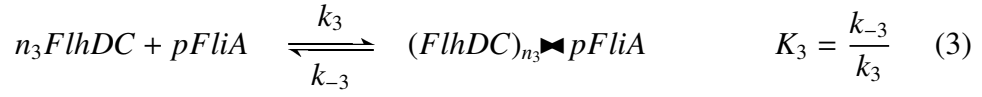


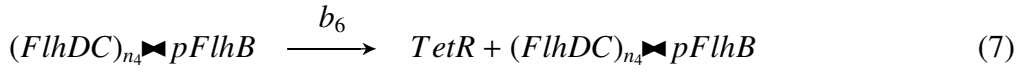
specific to pTet-circuit



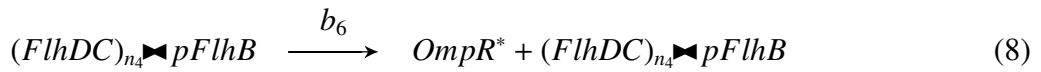
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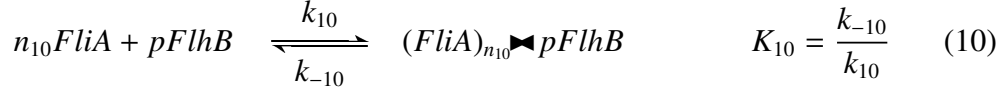
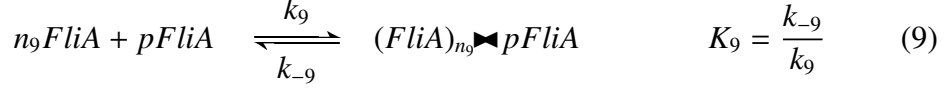


specific to pTet-circuit

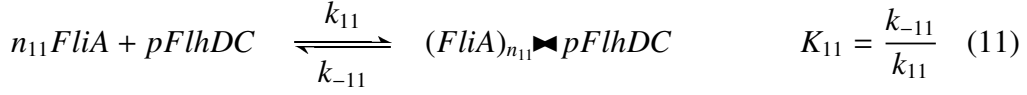


specific to pFlhDC-circuit

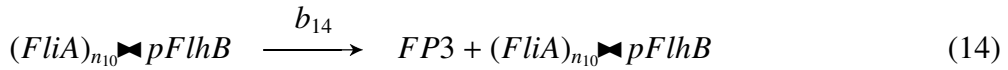
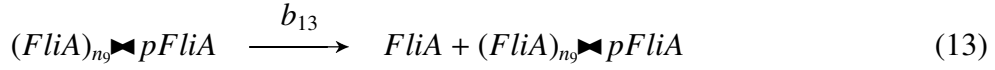
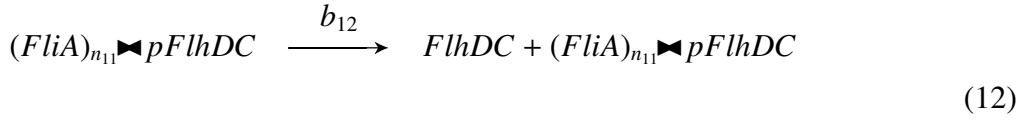




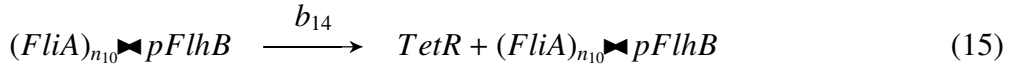
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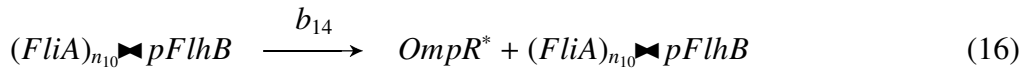
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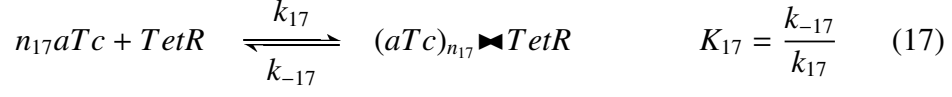
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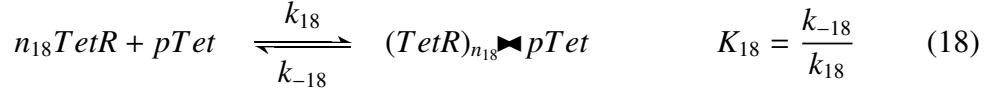
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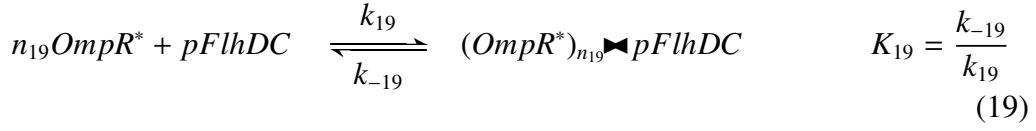
specific to pTet-circuit



specific to pTet-circuit



specific to pFlhDC-circuit



specific to pTet-circuit



specific to pFlhDC-circuit



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

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


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

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


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

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


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

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


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specific to pFlhDC-circuit

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

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


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specific to pTet-circuit

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

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


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specific to pTet-circuit

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

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


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specific to pFlhDC-circuit

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

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

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specific to pTet-circuit

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

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specific to pFlhDC-circuit

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

---

$$(5) \text{ and } (13) \text{ and } (21) \Rightarrow \frac{d[FliA]}{dt} = \beta_5[(FlhDC)_{n_3} \blacktriangleright pFliA]_{eq} + \beta_{13}[(FliA)_{n_9} \blacktriangleright pFliA]_{eq} - \gamma_{21}[FliA] \quad (43)$$

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$$(6) \text{ and } (14) \text{ and } (22) \Rightarrow \frac{d[FP3]}{dt} = \beta_6[(FlhDC)_{n_4} \blacktriangleright pFlhB]_{eq} + \beta_{14}[(FliA)_{n_{10}} \blacktriangleright pFlhB]_{eq} - \gamma_{22}[FP3] \quad (44)$$

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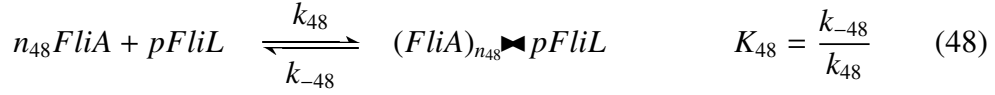
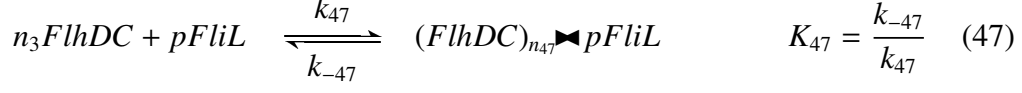
specific to pTet-circuit

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

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specific to pFlhDC-circuit

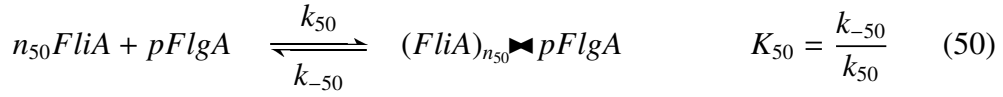
$$\begin{aligned} (8) \text{ and } (16) \text{ and } (24) \Rightarrow \frac{d[OmpR^*]}{dt} = & \beta_6[(FlhDC)_{n_4} \blacktriangleright pFlhB]_{eq} \\ & + \beta_{14}[(FliA)_{n_{10}} \blacktriangleright pFlhB]_{eq} \\ & - \gamma_{24}[OmpR^*] \end{aligned} \tag{46}$$



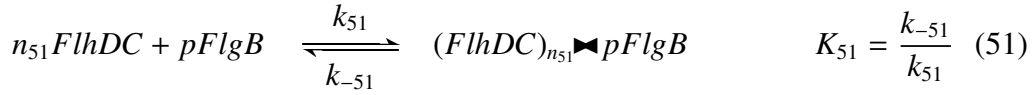
specific to pFlgA-circuit



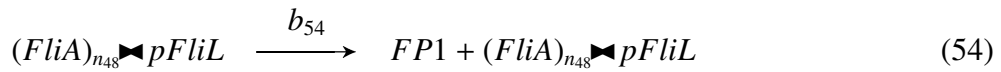
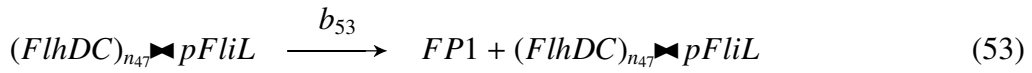
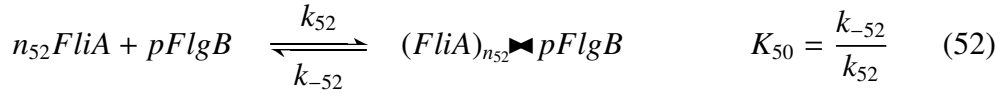
specific to pFlgA-circuit



specific to pFlgB-circuit

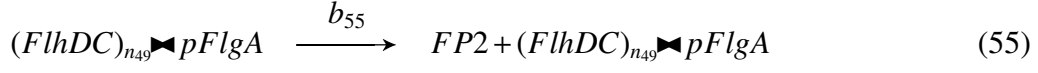


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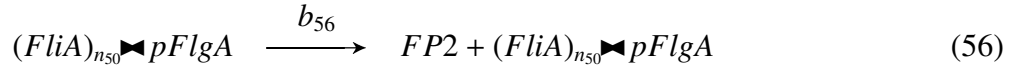




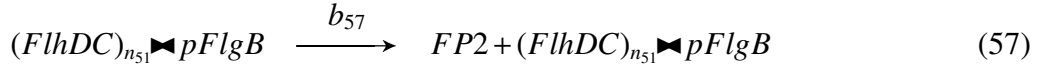
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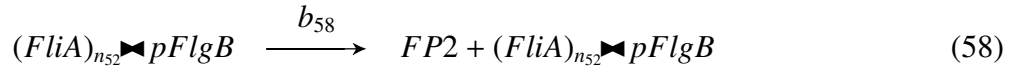
specific to pFlgA-circuit



specific to pFlgB-circuit



specific to pFlgB-circuit



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$$(47) \Rightarrow \frac{d[(FlhDC)_{n47} \blacktriangleright pFliL]}{d t} = k_{47}[FlhDC]^{n47} [pFliL] - k_{-47}[(FlhDC)_{n47} \blacktriangleright pFliL] \quad (61)$$

$$\Rightarrow [(FlhDC)_{n47} \blacktriangleright pFliL]_{eq} = \frac{[FlhDC]^{n47}}{K_{47} + [FlhDC]^{n47}} \cdot [pFliL^{total}] \quad (62)$$


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$$(48) \Rightarrow \frac{d[(FliA)_{n48} \blacktriangleright pFliL]}{d t} = k_9[FliA]^{n48} [pFliL] - k_{-48}[(FliA)_{n48} \blacktriangleright pFliL] \quad (63)$$

$$\Rightarrow [(FliA)_{n48} \blacktriangleright pFliL]_{eq} = \frac{[FliA]^{n48}}{K_{48} + [FliA]^{n48}} \cdot [pFliL^{total}] \quad (64)$$


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specific to pFlgA-circuit

$$(49) \Rightarrow \frac{d[(FlhDC)_{n49} \blacktriangleright pFlgA]}{d t} = k_{49}[FlhDC]^{n49} [pFlgA] - k_{-49}[(FlhDC)_{n49} \blacktriangleright pFlgA] \quad (65)$$

$$\Rightarrow [(FlhDC)_{n49} \blacktriangleright pFlgA]_{eq} = \frac{[FlhDC]^{n49}}{K_{49} + [FlhDC]^{n49}} \cdot [pFlgA^{total}] \quad (66)$$


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specific to pFlgA-circuit

$$(50) \Rightarrow \frac{d[(FliA)_{n50} \blacktriangleright pFlgA]}{d t} = k_9[FliA]^{n50} [pFlgA] - k_{-50}[(FliA)_{n50} \blacktriangleright pFlgA] \quad (67)$$

$$\Rightarrow [(FliA)_{n50} \blacktriangleright pFlgA]_{eq} = \frac{[FliA]^{n50}}{K_{50} + [FliA]^{n50}} \cdot [pFlgA^{total}] \quad (68)$$

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specific to pFlgB-circuit

$$(51) \Rightarrow \frac{d[(FlhDC)_{n51} \blacktriangleright pFlgB]}{dt} = k_{51}[FlhDC]^{n51}[pFlgB] - k_{-51}[(FlhDC)_{n51} \blacktriangleleft pFlgB] \quad (69)$$

$$\Rightarrow [(FlhDC)_{n51} \blacktriangleright pFlgB]_{eq} = \frac{[FlhDC]^{n51}}{K_{51} + [FlhDC]^{n51}} \cdot [pFlgB^{total}] \quad (70)$$

---

specific to pFlgB-circuit

$$(52) \Rightarrow \frac{d[(Flia)_{n52} \blacktriangleright pFlgB]}{dt} = k_{52}[Flia]^{n52}[pFlgB] - k_{-52}[(Flia)_{n52} \blacktriangleleft pFlgB] \quad (71)$$

$$\Rightarrow [(Flia)_{n52} \blacktriangleright pFlgB]_{eq} = \frac{[Flia]^{n52}}{K_{52} + [Flia]^{n52}} \cdot [pFlgB^{total}] \quad (72)$$

---


$$\begin{aligned}
(53) \text{ and } (54) \text{ and } (59) \Rightarrow \frac{d[FP1]}{dt} = & \beta_{53}[(FlhDC)_{n_{47}} \blacktriangleright pFlgL] \\
& + \beta_{54}[(FliA)_{n_{48}} \blacktriangleright pFlgL] \\
& - \gamma_{59}[FP1]
\end{aligned}
\tag{73}$$


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specific to pFlgA-circuit

$$\begin{aligned}
(55) \text{ and } (56) \text{ and } (60) \Rightarrow \frac{d[FP2]}{dt} = & \beta_{55}[(FlhDC)_{n_{49}} \blacktriangleright pFlgA] \\
& + \beta_{56}[(FliA)_{n_{50}} \blacktriangleright pFlgA] \\
& - \gamma_{60}[FP2]
\end{aligned}
\tag{74}$$


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specific to pFlgB-circuit

$$\begin{aligned}
(57) \text{ and } (58) \text{ and } (60) \Rightarrow \frac{d[FP2]}{dt} = & \beta_{57}[(FlhDC)_{n_{51}} \blacktriangleright pFlgB] \\
& + \beta_{58}[(FliA)_{n_{52}} \blacktriangleright pFlgB] \\
& - \gamma_{60}[FP2]
\end{aligned}
\tag{75}$$