

## Equations due to Complexations, according to our Model

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$$(1) \Rightarrow [(FlhDC)_{n_1} \blacktriangleright pFliA]_{eq} = \frac{[FlhDC]^{n_1}}{K_1^{n_1} + [FlhDC]^{n_1}} \cdot [pFliA^{total}] \quad (44)$$


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$$(7) \Rightarrow [(FliA)_{n_7} \blacktriangleright pFliA]_{eq} = \frac{[FliA]^{n_7}}{K_7^{n_7} + [FliA]^{n_7}} \cdot [pFliA^{total}] \quad (45)$$


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$$(2) \Rightarrow [(FlhDC)_{n_2} \blacktriangleright pFliL]_{eq} = \frac{[FlhDC]^{n_2}}{K_2^{n_2} + [FlhDC]^{n_2}} \cdot [pFliL^{total}] \quad (46)$$


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$$(8) \Rightarrow [(FliA)_{n_8} \blacktriangleright pFliL]_{eq} = \frac{[FliA]^{n_8}}{K_8^{n_8} + [FliA]^{n_8}} \cdot [pFliL^{total}] \quad (47)$$


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specific to pFlgA-circuit

$$(3) \Rightarrow [(FlhDC)_{n_3} \blacktriangleright pFlgA]_{eq} = \frac{[FlhDC]^{n_3}}{K_3^{n_3} + [FlhDC]^{n_3}} \cdot [pFlgA^{total}] \quad (48)$$


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specific to pFlgA-circuit

$$(9) \Rightarrow [(FliA)_{n_9} \blacktriangleright pFlgA]_{eq} = \frac{[FliA]^{n_9}}{K_9^{n_9} + [FliA]^{n_9}} \cdot [pFlgA^{total}] \quad (49)$$


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specific to pFlgB-circuit

$$(4) \Rightarrow [(FlhDC)_{n_4} \blacktriangleright pFlgB]_{eq} = \frac{[FlhDC]^{n_4}}{K_4^{n_4} + [FlhDC]^{n_4}} \cdot [pFlgB^{total}] \quad (50)$$


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specific to pFlgB-circuit

$$(10) \Rightarrow [(FliA)_{n_{10}} \blacktriangleright pFlgB]_{eq} = \frac{[FliA]^{n_{10}}}{K_{10}^{n_{10}} + [FliA]^{n_{10}}} \cdot [pFlgB^{total}] \quad (51)$$


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$$(5) \Rightarrow [(FlhDC)_{n_5} \blacktriangleright pFlhB]_{eq} = \frac{[FlhDC]^{n_5}}{K_5^{n_5} + [FlhDC]^{n_5}} \cdot [pFlhB^{total}] \quad (52)$$


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$$(11) \Rightarrow [(FliA)_{n_{11}} \blacktriangleright pFlhB]_{eq} = \frac{[FliA]^{n_{11}}}{K_{11}^{n_{11}} + [FliA]^{n_{11}}} \cdot [pFlhB^{total}] \quad (53)$$


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specific to pFlhDC-circuit

$$(6) \Rightarrow [(FliA)_{n_6} \blacktriangleright pFlhDC]_{eq} = \frac{[FliA]^{n_6}}{K_6^{n_6} + [FliA]^{n_6}} \cdot [pFlhDC^{total}] \quad (54)$$


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specific to pTet-circuit

$$(12) \Rightarrow [TetR^{free}] = \frac{K_{12}^{n_{aTc}}}{K_{12}^{n_{aTc}} + [aTc]_i^{n_{aTc}}} \cdot [TetR^{total}] \quad (55)$$


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specific to pTet-circuit

$$(13) \Rightarrow [pTet]_{eq} = \frac{K_{13}^{n_{13}}}{K_{13}^{n_{13}} + [TetR^{free}]^{n_{13}}} \cdot [pTet^{total}] \quad (56)$$


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specific to pFlhDC/EnvZ-circuit

$$(14) \Rightarrow \begin{cases} ([EnvZ^{total}] - n_{14} OmpR_{eq}^*)^{n_{14}} ([OmpR^{total}] - OmpR_{eq}^*) - K_{14}^{eff} OmpR_{eq}^* = 0 \\ 0 < n_{14} OmpR_{eq}^* \quad ; \quad 0 < OmpR_{eq}^* < [OmpR^{total}] \end{cases} \quad (57)$$


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specific to pFlhDC-circuit

$$(15) \Rightarrow [pFlhDC]_{eq} = \frac{K_{15}^{n_{15}}}{K_{15}^{n_{15}} + [OmpR^*]^{n_{15}}} \cdot [pFlhDC^{total}] \quad (58)$$