

| reaction name                                     | reaction  | kinetic law | equation  |
|---|---|-------------|---|
| mRNA <sub>amo</sub> transcription                 | DNA <sub>amo</sub> → mRNA <sub>amo</sub>                        | mass action | C <sub>amo</sub> · DNA <sub>amo</sub>   |
| mRNA <sub>factor</sub> transcription              | DNA <sub>factor</sub> → mRNA <sub>factor</sub>                  | mass action | C <sub>factor</sub> · DNA <sub>factor</sub>   |
| mRNA <sub>GFP</sub> transcription                 | complex:promoter → mRNA <sub>GFP</sub>                          | mass action | C <sub>GFP</sub> · [complex:promoter]   |
| AMO protein translation                           | mRNA <sub>amo</sub> → AMO                                       | mass action | v <sub>amo</sub> · [mRNA <sub>amo</sub> ]   |
| factor translation                                | mRNA <sub>factor</sub> → factor                                 | mass action | v <sub>factor</sub> · [mRNA <sub>factor</sub> ]   |
| GFP (immature) translation                        | mRNA <sub>GFP</sub> → GFP <sub>im</sub>                         | mass action | v <sub>GFPim</sub> · [mRNA <sub>GFP</sub> ]   |
| complex AMO:chlor formation                       | AMO + chlor ↔ AMO:chlor   | mass action | k <sub>1</sub> · [AMO] · [chlor] - k <sub>-1</sub> · [AMO:chlor]  |
| COCl <sub>2</sub> formation                       | complex AMO:chlor → AMO + COCl <sub>2</sub>                     | mass action | k <sub>COCl2</sub> · [AMO:chlor]  |
| complex factor:COCl <sub>2</sub> formation        | factor + COCl <sub>2</sub> ↔ factor:COCl <sub>2</sub>           | mass action | k <sub>2</sub> · [factor] · [COCl <sub>2</sub> ] - k <sub>-2</sub> · [factor:COCl <sub>2</sub> ]                                |
| Complex <sub>poly</sub> formation                 | factor:COCl <sub>2</sub> + Polymerase ↔ complex <sub>poly</sub> | mass action | k <sub>3</sub> · [factor:COCl <sub>2</sub> ] - k <sub>-3</sub> · [complex <sub>poly</sub> ]                                     |
| Complex <sub>promoter</sub> formation             | Complex <sub>poly</sub> + mbla ↔ complex <sub>promoter</sub>    | mass action | k <sub>4</sub> · [complex <sub>poly</sub> ] · [mbla] - k <sub>-4</sub> · [complex <sub>promoter</sub> ]                         |
| GFP protein formation                             | GFP <sub>im</sub> → GFP   | mass action | k <sub>fold</sub> · [GFP <sub>im</sub> ]  |
| GFP(misfold) formation                            | GFP <sub>im</sub> → GFP <sub>mis</sub>                          | mass action | k <sub>mis</sub> · [GFP <sub>im</sub> ]   |
| inhibited complex formation                       | factor (pH inhibition) → factor <sub>mis</sub>                  | mass action | k <sub>1</sub> · [factor] · (1 + 10 <sup>a · pH</sup> + 10 <sup>b · pH - c</sup> ) - k <sub>-1</sub> · [factor <sub>mis</sub> ] |
| mRNA <sub>amo</sub> degradation                   | mRNA <sub>amo</sub> →   | mass action | d <sub>mRNAamo</sub> · [mRNA <sub>amo</sub> ]   |
| AMO protein degradation                           | AMO →   | mass action | d <sub>AMO</sub> · [RNA]  |
| complex AMO:chlor degradation                     | AMO:chlor →   | mass action | d <sub>AMO:chlor</sub> · [AMO:chlor]  |
| mRNA <sub>factor</sub> degradation                | mRNA <sub>factor</sub> →  | mass action | d <sub>mRNAfactor</sub> · [mRNA <sub>factor</sub> ]   |
| factor degradation                                | factor →  | mass action | d <sub>factor</sub> · [factor]  |
| complex factor:COCl <sub>2</sub> degradation      | factor:COCl <sub>2</sub> →                                      | mass action | d <sub>factor:COCl2</sub> · [factor:COCl <sub>2</sub> ]   |
| Complex <sub>poly</sub> degradation               | Complex <sub>poly</sub> →                                       | mass action | d <sub>complex:poly</sub> · [complex <sub>poly</sub> ]  |
| Complex <sub>promoter</sub> degradation           | Complex <sub>promoter</sub> →                                   | mass action | d <sub>complex:promoter</sub> · [complex <sub>promoter</sub> ]  |
| mRNA <sub>GFP</sub> degradation                   | mRNA <sub>GFP</sub> →   | mass action | d <sub>mGFP</sub> · [mRNA <sub>GFP</sub> ]  |
| GFP (immature) degradation                        | GFP <sub>im</sub> →   | mass action | d <sub>GFPim</sub> · [GFP <sub>im</sub> ]   |
| GFP (misfold) degradation                         | GFP <sub>mis</sub> →  | mass action | d <sub>GFPmis</sub> · [GFP <sub>mis</sub> ]   |
| GFP protein degradation                           | GFP →   | mass action | d <sub>GFP</sub> · [GFP]  |
| Misfolded factor degradation                      | factor <sub>mis</sub> →   | mass action | d <sub>TH</sub> · [factor <sub>mis</sub> ]  |
| equilibrium between GFP protein and GFP misfolded | GFP <sub>im</sub> ↔ GFP   | mass action | k <sub>5</sub> · [GFP] - k <sub>-5</sub> · [GFP <sub>mis</sub> ]  |