```
final simplex: (array([[6.60009484e+02, 1.61583502e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543535e-04, 2.62603158e+00,
                                                                                                                                    9.04271983e+00, 6.20261293e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                                                                                                                                   [6.60009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862948e+03, 6.39543535e-04, 2.62603158e+00,
                                                                                                                                    9.04271983e+00, 6.20261293e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                                                                                                                                   [6.60009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543535e-04, 2.62603158e+00,
                                                                                                                                    9.04271982e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                                                                                                                                   [6.60009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
                                                                                                                                    9.04271982e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                                                                                                                                   [6.60009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
                                                                                                                                    9.04271980e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                                                                                                                                  [6.60009484e+02, 1.61583502e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
                 ['SM data type data plots for mutation', 'Regulator2'] = +00, 6.2026129 = +00 Initial Guess = +03, 1.27356981e+01, ucer -> sensor (GFP output) inducer -> = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 = -8 =
         inducer -> sensor (GFP output)
                                                                                                                                    4.48403432e+03, 4.586294 e+03Converged 36e-04, 2.62603158e+00,
                                                                                                                                  9.04271982e+00, 6.2026129 4e+04 Converged 5e-03, 1.27356981e+01, 4.49385943e+00, 2.5164908 5e+00 12/6919e+00], [6.60009484e+02, 1.6158350 3e+04 Converged 12e+03, 1.17804007e+00, 4.48403432e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
10^{4}
                                                                                    6 \times 10^{3}
                                                                                                                                    9.04271980e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01, 4.49385943e+00, 2.$1649085e+00, 1.27625619e+00],
                                                                                    4 \times 10^{3}
                                                                                                                                   [6.60009484e+02, 1.$1583502e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                    3 \times 10^{3}
                                                                                                                                    4.48403432e+03, 4.$5862949e+03, 6.39543536e-04, 2.62603158e+00,
10^{3}
                                                                                                                                    9.04271982e+00, 6.20261293e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49<del>385943e+00, 2</del>.$1649085e+00, 1.27625619e+00],
                                                                                                                                    6.60009484e+02.1.61583502e+04, 1.32105312e+03, 1.17804007e+00, 4.048403492e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
                                       10^{-3}
                       10^{-4}
                                                        10^{-2}
                                                                         10^{-1}
                                                                                                  10^{-5}
                                                                                                                  10^{-4}
                                                                                                                Full circun ար ար արանանան անագրան անագրան անագրան հայարան անագրան ան
             inducer -> S -| Output (GFP)
                                                                                                                                           <del>93859436+00, 2.</del>51649085e+00, 1.27625619e+00],
                                                                                                                                  6 \times 10^{3}
                                                                                                                                    4.48403432e+03, 4.$5862949e+03, 6.39543536e-04, 2.62603158e+00,
                                                                                                                                •\Q.04271982e+00, 6.\20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4\49385943e+00, 2.\$1649085e+00, 1.27625619e+00],
10^{4}
                                                                                                                                   [660009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                    4 \times 10^{3}
                                                                                                                                    4.48403432e+03, 4.$5862949e+03, 6.39543536e-04, 2.62603158e+00,
                                                                                                                                  9 04271981e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01, 4.19385943e+00, 2.51649085e+00, 1.27625619e+00], [6.6009484e+02, 1.61583502e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                    3 \times 10^{3}
                                                                                                                                    4.48403432e+03, 4.$5862949e+03, 6.39543536e-04, 2.62603158e+00,
                                                                                                                                    9.04271982e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
10^{3}
                                                                                                                                    4<sub>0</sub>49385943e+00<sub>1</sub>2-51649085e+00, 1.27625619e+00],
      10^{-5}
                                        10^{-3}
                                                        10^{-2}
                                                                                                                  10^{-4}
                       10^{-4}
                                                                         10^{-1}
                                                                                                  10^{-5}
                                                                                                                                   [6.60009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543535e-04, 2.62603158e+00,
                   Across all four plots:
                                                                                                                                    9.04271982e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                       RSS (converged)=0.052
                                                                                                                                   [6.60009484e+02, 1.61583503e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
                       RSS (initial) = 1.367
                                                                                                                                    9.04271981e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                                                                                                    4.49385943e+00, 2.51649085e+00, 1.27625619e+00],
                       RSS (% reduction)=0.963
                                                                                                                                   [6.60009484e+02, 1.61583502e+04, 1.32105312e+03, 1.17804007e+00,
                                                                                                                                    4.48403432e+03, 4.55862949e+03, 6.39543536e-04, 2.62603158e+00,
                                   epsilon Initial guesses Converged
                                                                                                                                    9.04271982e+00, 6.20261294e+04, 1.25910635e-03, 1.27356981e+01,
                                                            608.397103 660.009484
                              51.612381
                                                                                                                                   4.49385943e+00, 2.51649085e+00, 1.27625619e+00]]), array([0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.052159
                             907.892550
                                                          15250.457700 16158.350250
                                                                                                                                  0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984,
                  C_s -347.005933
                                                            1668.059050 1321.053117
                                                                                                                                   0.05215984, 0.05215984, 0.05215984, 0.05215984, 0.05215984,
                              -0.020893
                                                             1.198934
                                                                                  1.178040
                                                                                                                                  0.05215984]))
                                                             687.964693 4484.034321
                  Ar 3796.069628
                                                                                                                                       fun: 0.052159835765045286
                  B r -18938.981913
                                                            23497.611400 4558.629487
                                                                                                                                   message: 'Optimization terminated successfully.'
                              -0.061728
                                                             0.062367
                                                                                     0.000640
                  Сr
                                                                                                                                      nfev: 33793
                               2.234301
                                                             0.391731
                  Νr
                                                                                     2.626032
                                                                                                                                       nit: 25805
                  A h -581.563828
                                                             590.606548
                                                                                            9.042720
                                                                                                                                    status: 0
                  B h 26739.003638
                                                             35287.125700 62026.129338
                                                                                                                                   success: True
                                0.000729
                                                             0.000530
                                                                                      0.001259
                  Сh
                                                                                                                                         x: array([6.60009484e+02, 1.61583502e+04, 1.32105312e+03, 1.17804007e+00,
                  Αо
                               11.905868
                                                              0.829830
                                                                                      12.735698
                                                                                                                                   4.48403432e+03, 4.55862949e+03, 6.39543535e-04, 2.62603158e+00,
                                0.205689
                                                             4.288170
                                                                                      4.493859
                                                                                                                                  9.04271983e+00, 6.20261293e+04, 1.25910635e-03, 1.27356981e+01,
                               -0.616731
                  Со
                                                             3.133222
                                                                                       2.516491
                                                                                                                                  4.49385943e+00, 2.51649085e+00, 1.27625619e+00])
                               -0.532762
                                                             1.809018
                                                                                      1.276256
                  N_o
```