```
Building Model
p_putida.xml already exists
Basic info of the model
model has 2606 reactions
model has 1721 metabolites
model has 1716 genes
The default flux bounds are: (-1000.0, 1000.0)
Maximize
1.0*Growth - 1.0*Growth_reverse_699ae
max
objective expression 1.0*Growth - 1.0*Growth_reverse_699ae
<Solution 0.495 at 0x7fc8e4b05310>
Obiective 5 4 1
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1.0 Growth = 0.49524025041046654
Uptake
Metabolite
                 Reaction
                                     C-Number C-Flux
                               Flux
   M_ca2_e
               R_EX_ca2_e 0.002578
                                              0.00%
                                            0
               R EX cl e 0.002578
    M cl e
                                            0
                                              0.00%
M_cobalt2_e R_EX_cobalt2_e 4.952E-05
                                            0
                                              0.00%
   M_cu2_e
               R_EX_cu2_e 0.0003511
                                            0
                                               0.00%
   M_fe2_e
               R_EX_fe2_e 0.003546
                                            0
                                              0.00%
   M_fe3_e R_EX_fe3_e 0.003867
                                            0
                                               0.00%
M_glc__D_e
            R_EX_glc__D_e
                                 10
                                            6 100.00%
                 R_EX_k_e 0.09667
     M_k_e
                                            0
                                               0.00%
   M mg2 e
              R_EX_mg2_e 0.004296
                                            0
                                               0.00%
   M_mn2_e
              R_EX_mn2_e 0.0003422
                                            0
                                              0.00%
             R_EX_nh4_e
   M_nh4_e
                             9.158
                                            0
                                              0.00%
   M_o2_e
               R_EX_o2_e
                                              0.00%
                                 10
                                            0
              R_EX_pi_e 0.4774
    M_pi_e
                                            0
                                              0.00%
              R_EX_so4_e 0.1241
   M_so4_e
                                            0
                                               0.00%
              R_EX_zn2_e 0.0001689
   M zn2 e
                                            0
                                               0.00%
Secretion
Metabolite
 tabolite Reaction Flux
M_4hbz_e R_EX_4hbz_e 0.0001104
                              Flux
                                    C-Number C-Flux
                                             0.00%
                                          7
  M_co2_e R_EX_co2_e
                                           1 42.29%
                             16.78
  M_h2o_e
            R_EX_h2o_e
                            33.67
                                          0 0.00%
    M_h_e
               R_EX_h_e
                             8.37
                                          0
                                             0.00%
M_leu__L_e R_EX_leu__L_e 3.817
                                          6 57.71%
```