

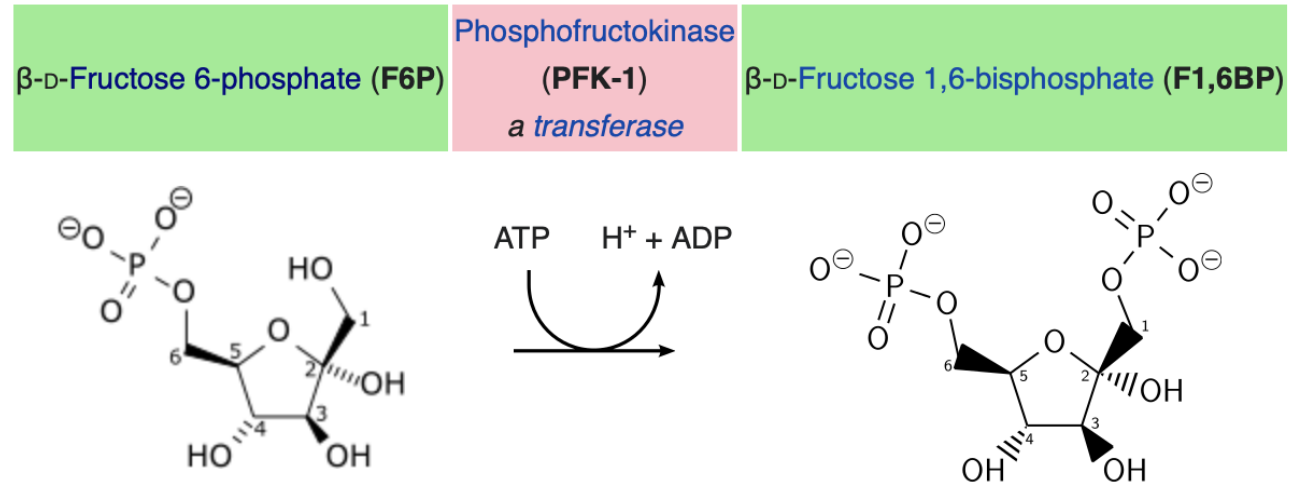


# PFKL Extension model

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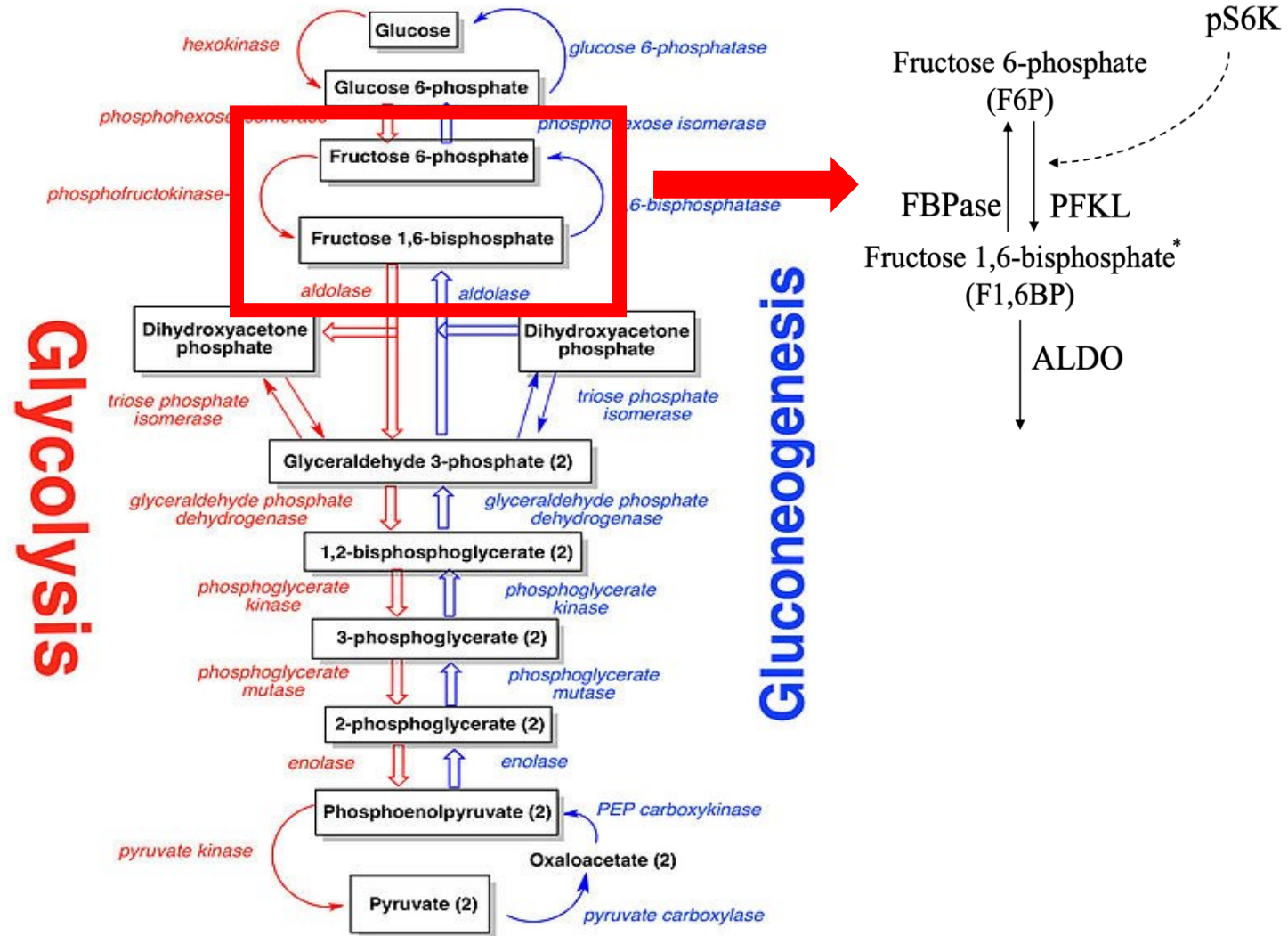
# Background

- PFKL Fructose 6-phosphate  $\rightleftharpoons$  Fructose 1,6-biphosphate
- Consume ATP; irreversible and restricting the rate of the glycolysis



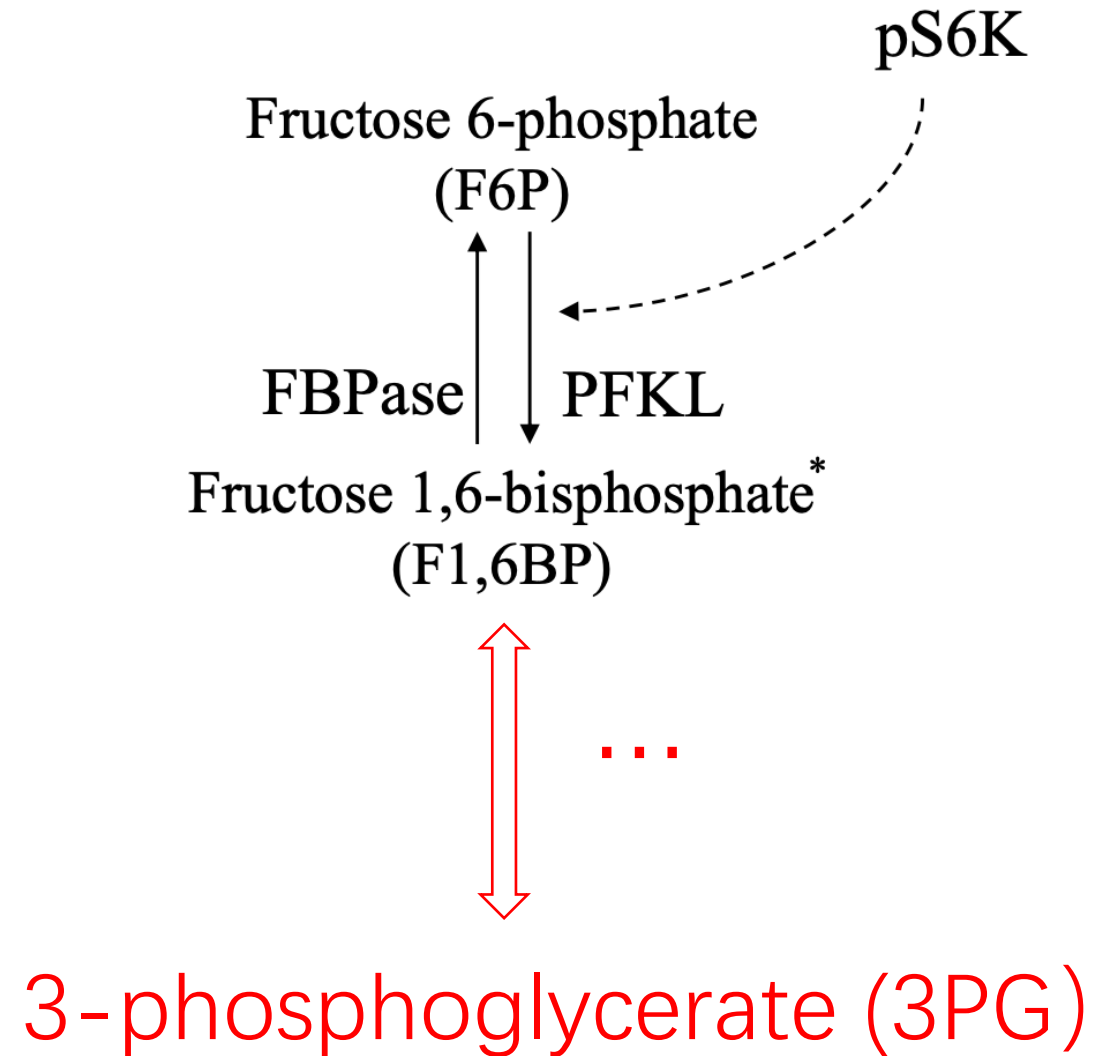
# Simple Model

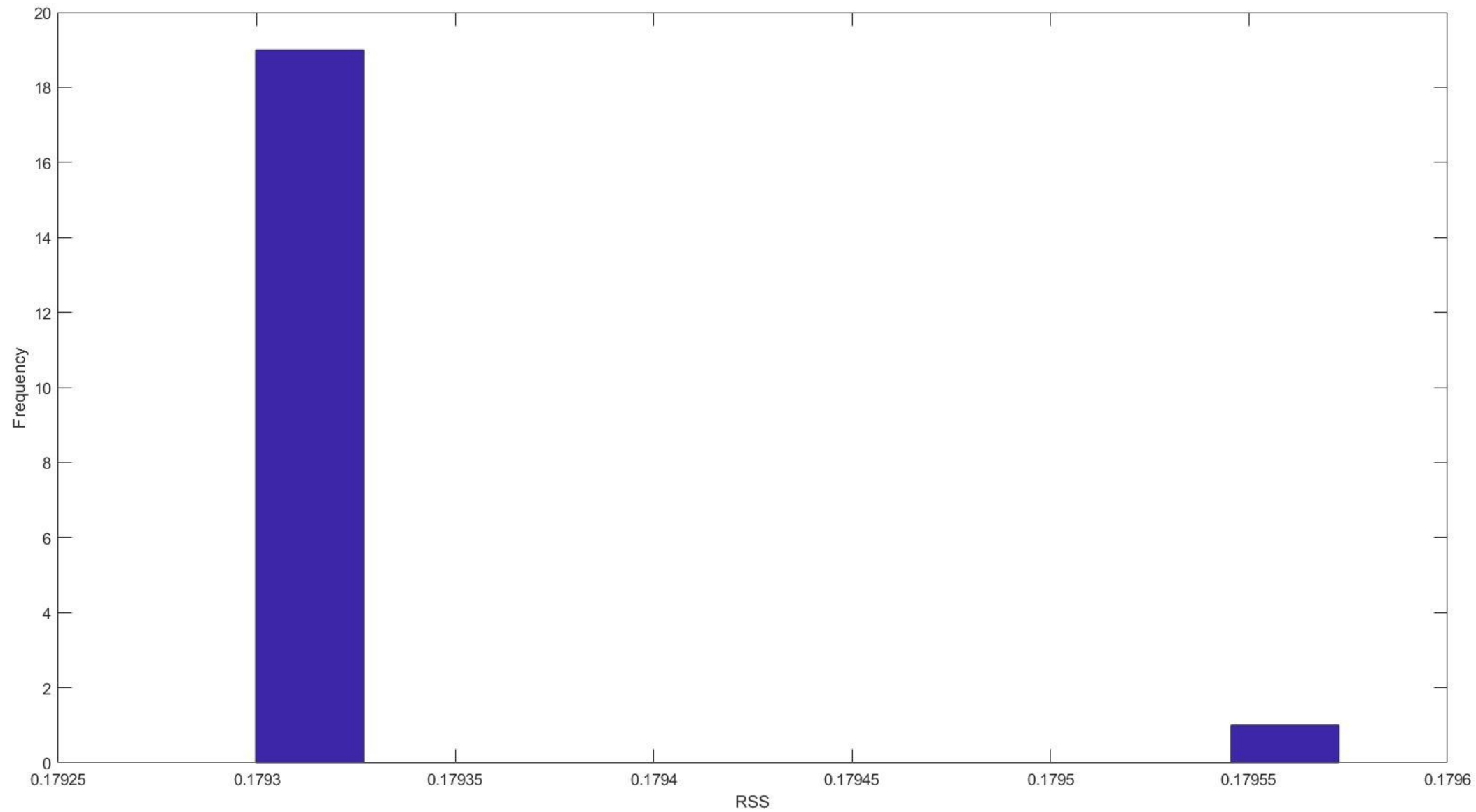
- Aldolase contains several different enzymes (Aldolase, FBA, fbaB and etc. ) for F1,6BP
- The pathway is also regulated by downstream metabolites concentrate



# Optimized Model

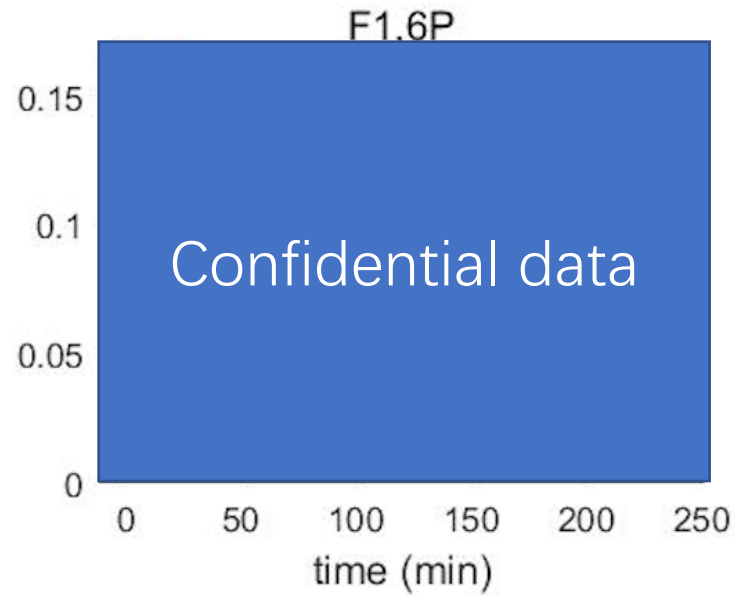
- nParent=20;
- nGen=500;
- Iteration=20
  
- # of parameters = 4
- RSS = 0.1793
- AIC = -33.2487



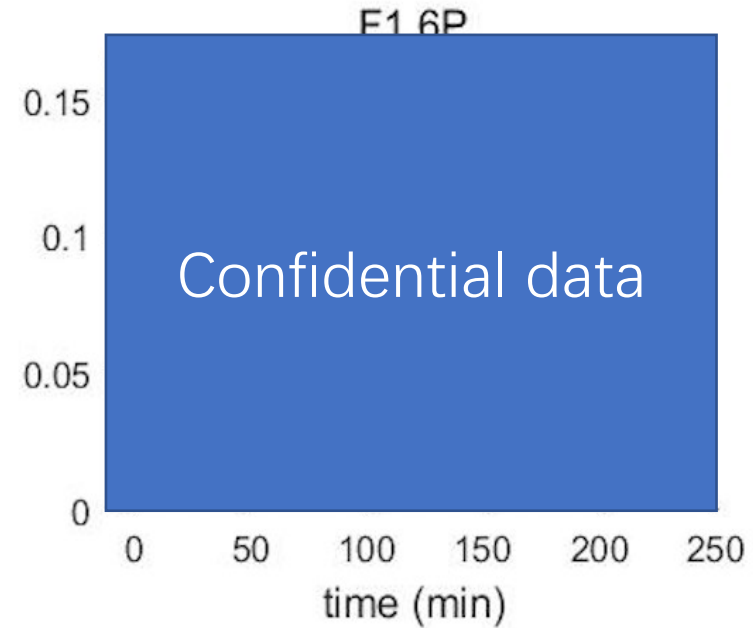


# Comparison

Confidential data



RSS=0.43749  
AIC=-13.8409



RSS=0.1973  
AIC=-33.2487

# Conclusion

- Negative Feedback makes a non-linear simulation
- The F1,6P concentrate will
- 0- 50min simulation is not so precise (the initial change of the system may be so complicated).



Thanks!