

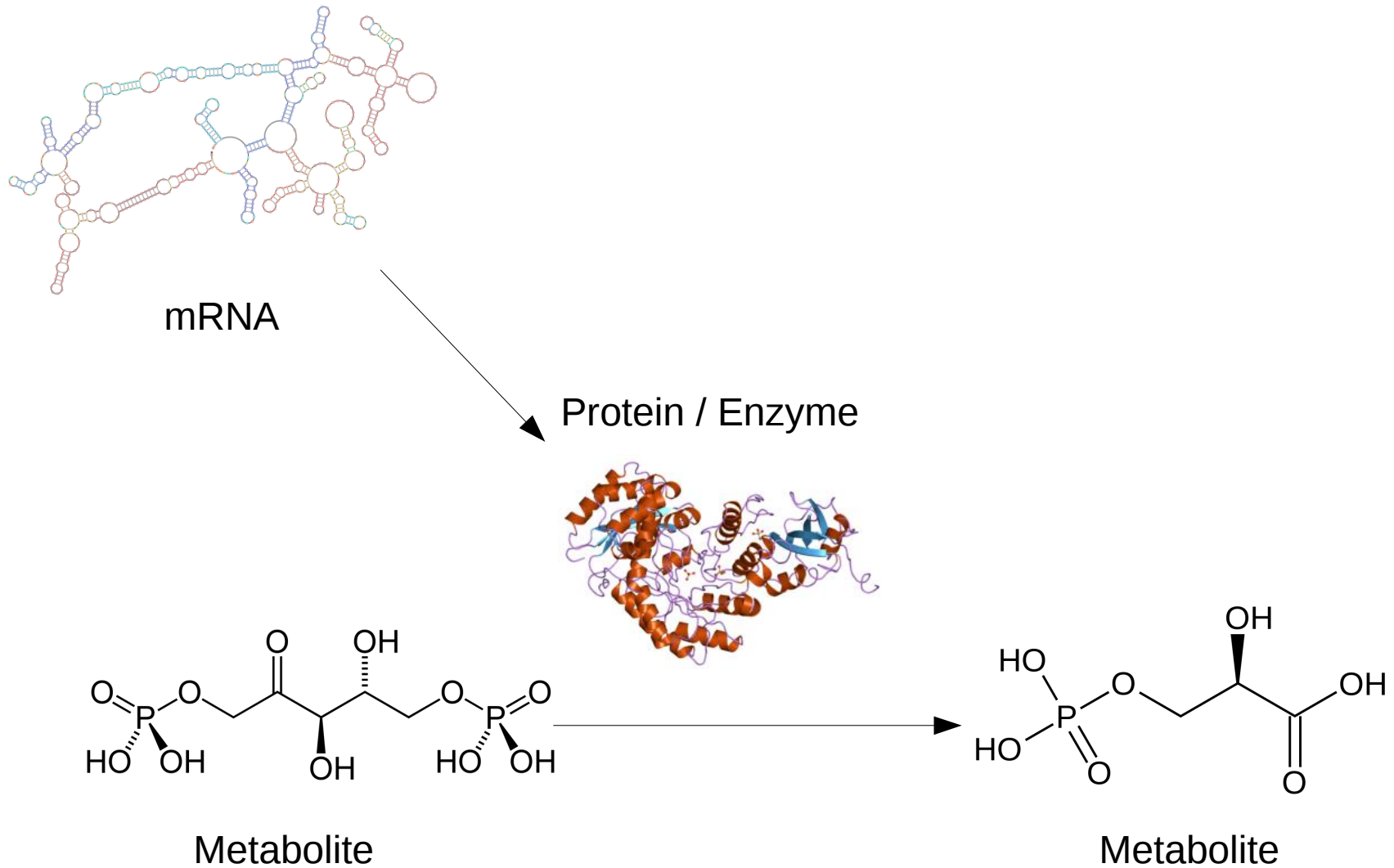
Transcriptobolomics

Bertram Vogel

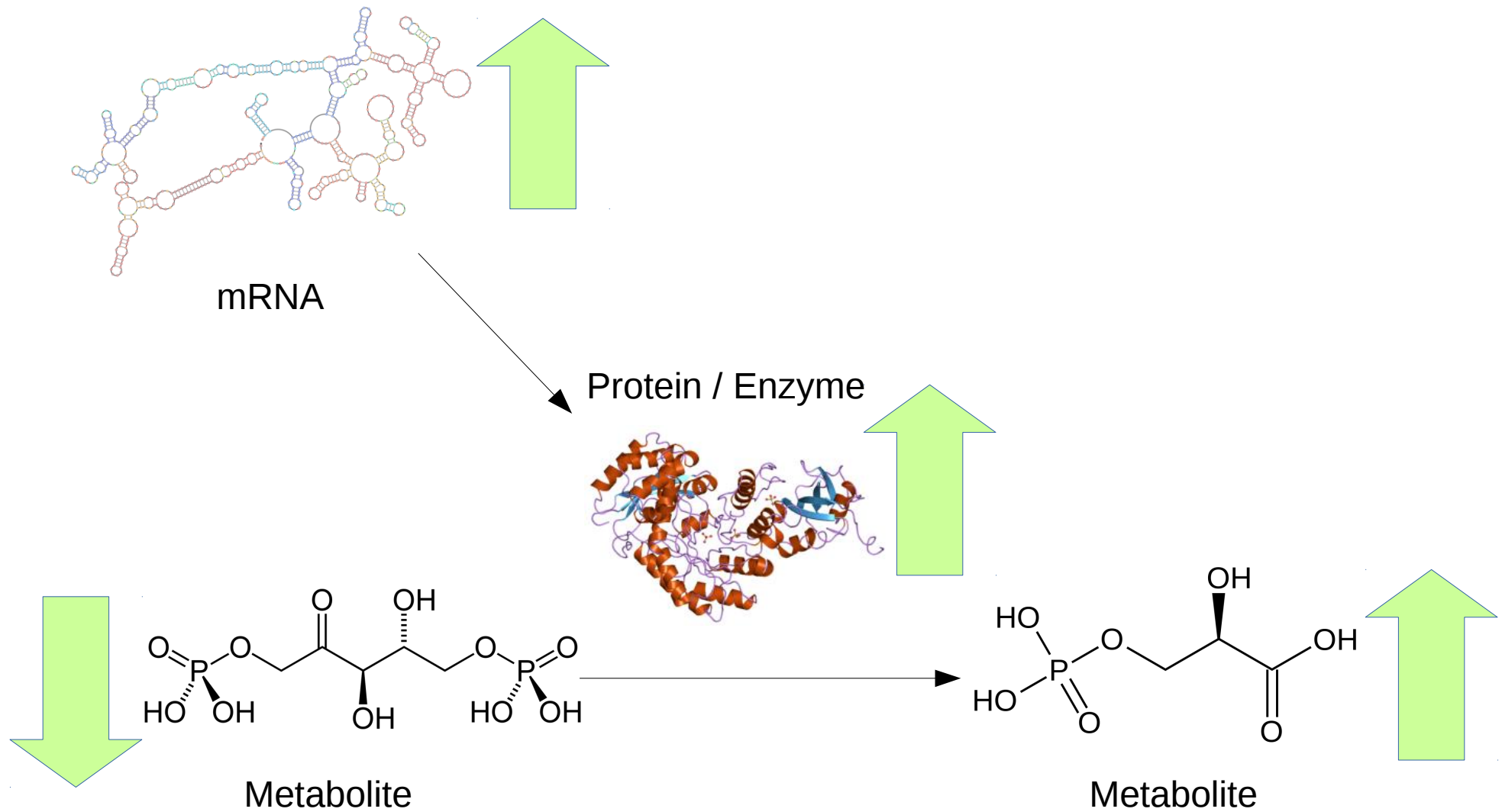
Faculty of Mathematics and Computer Science
RNA Bioinformatics and High Throughput Analysis & Chair of Bioinformatics
Friedrich-Schiller University Jena

TBI Winterseminar 16.02.2015

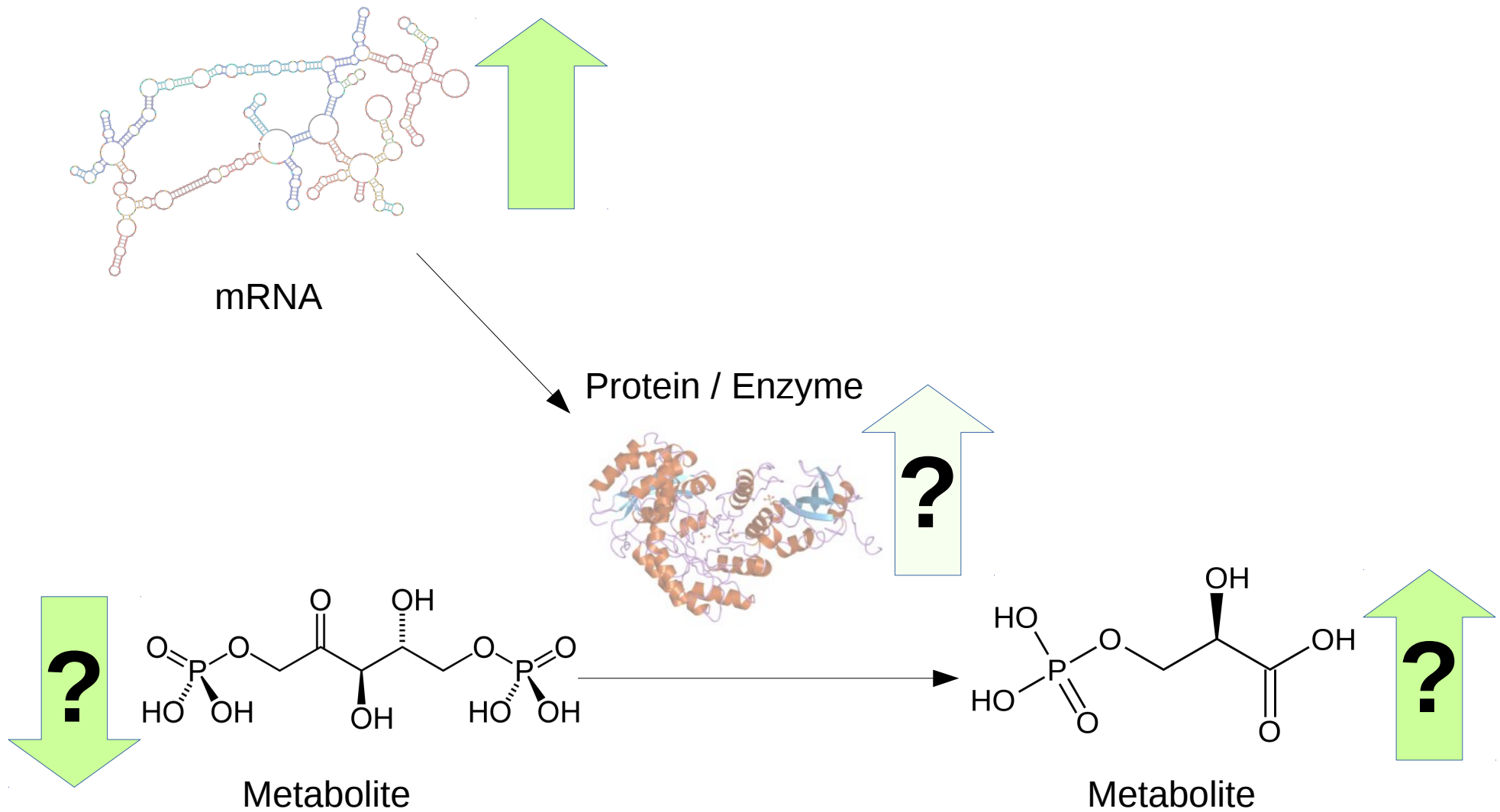
General Idea



General Idea

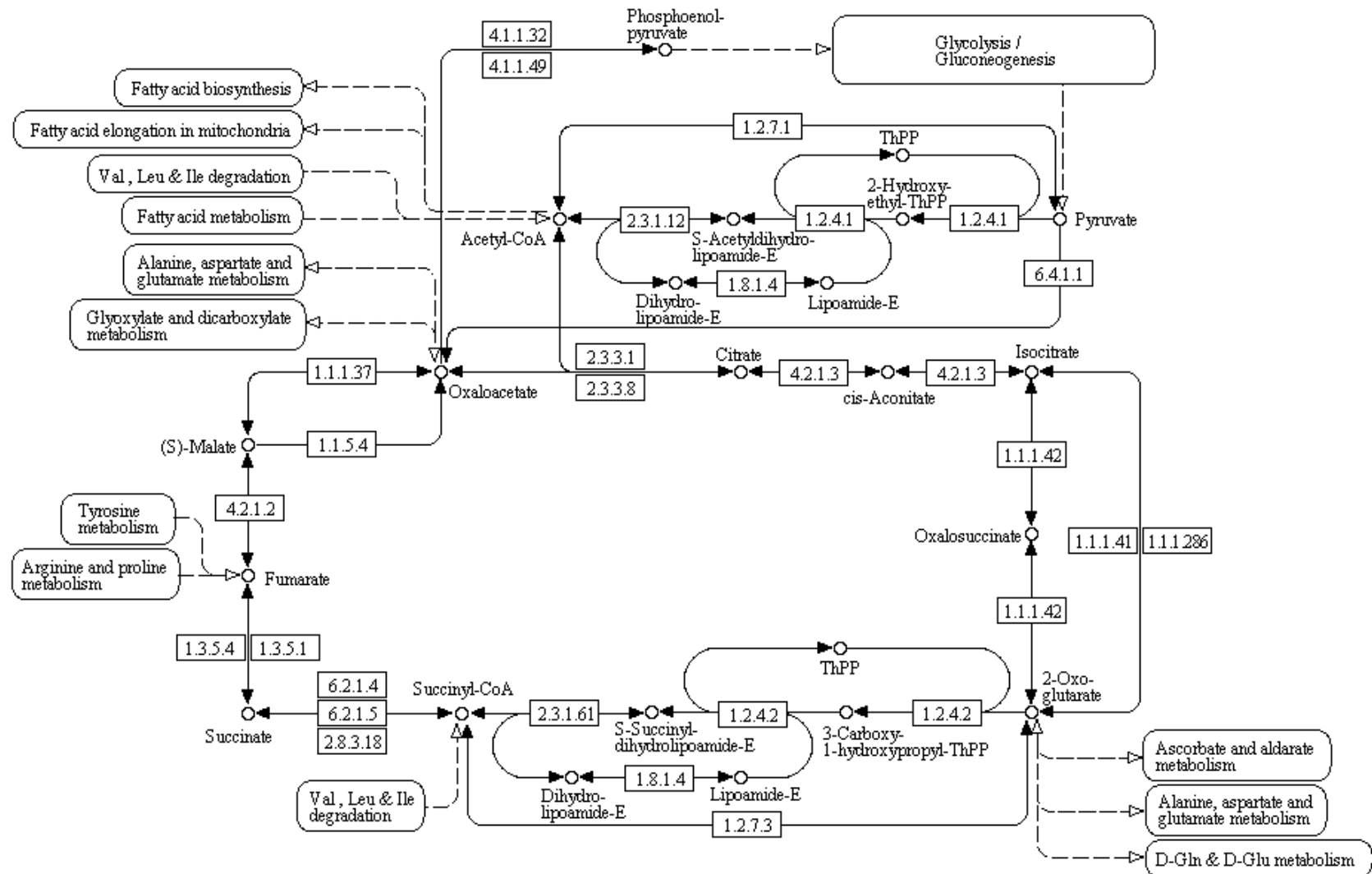


General Idea



Pathway Analysis

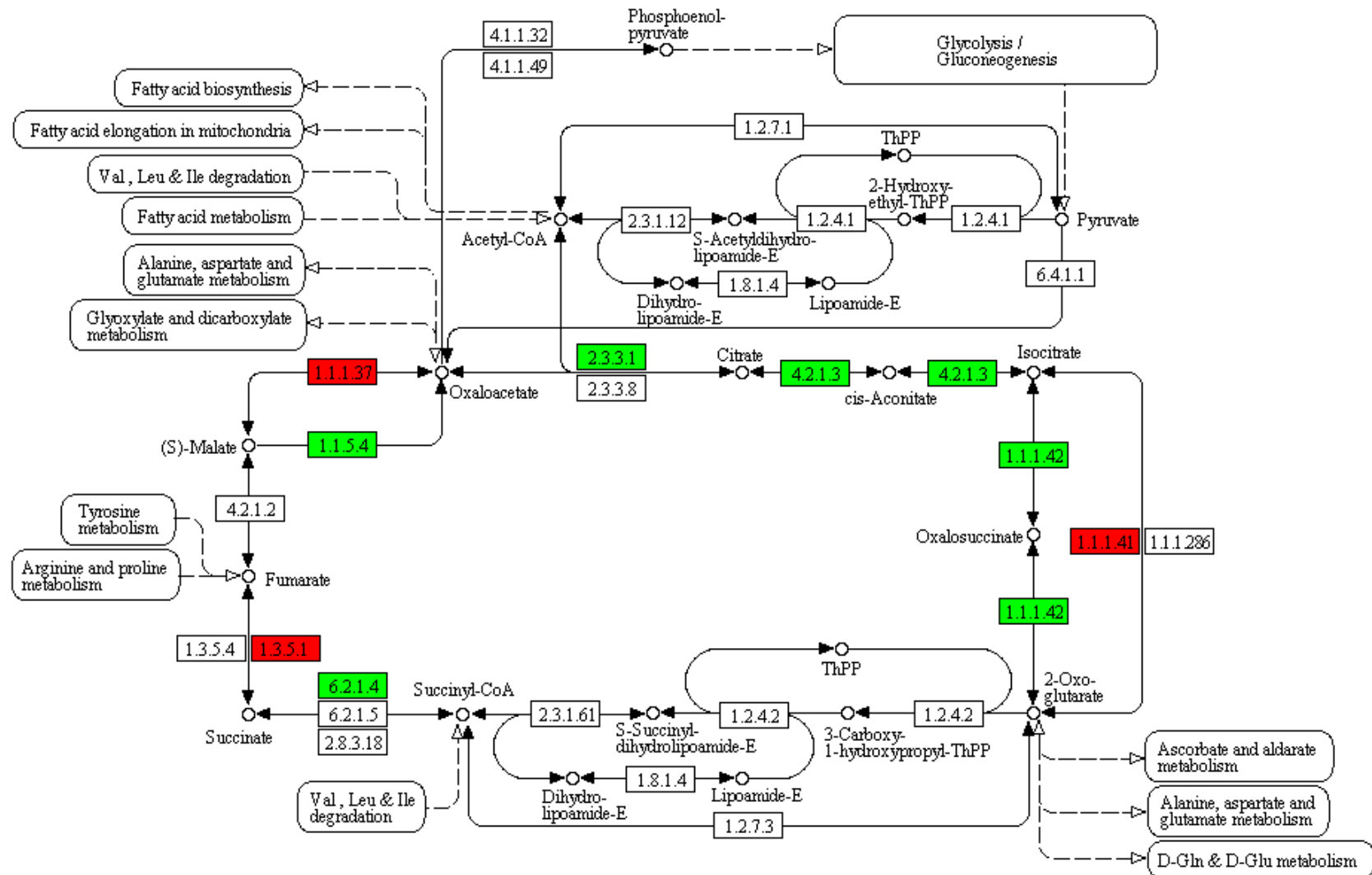
CITRATE CYCLE (TCA CYCLE)



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(c) Kanehisa Laboratories

Pathway Analysis

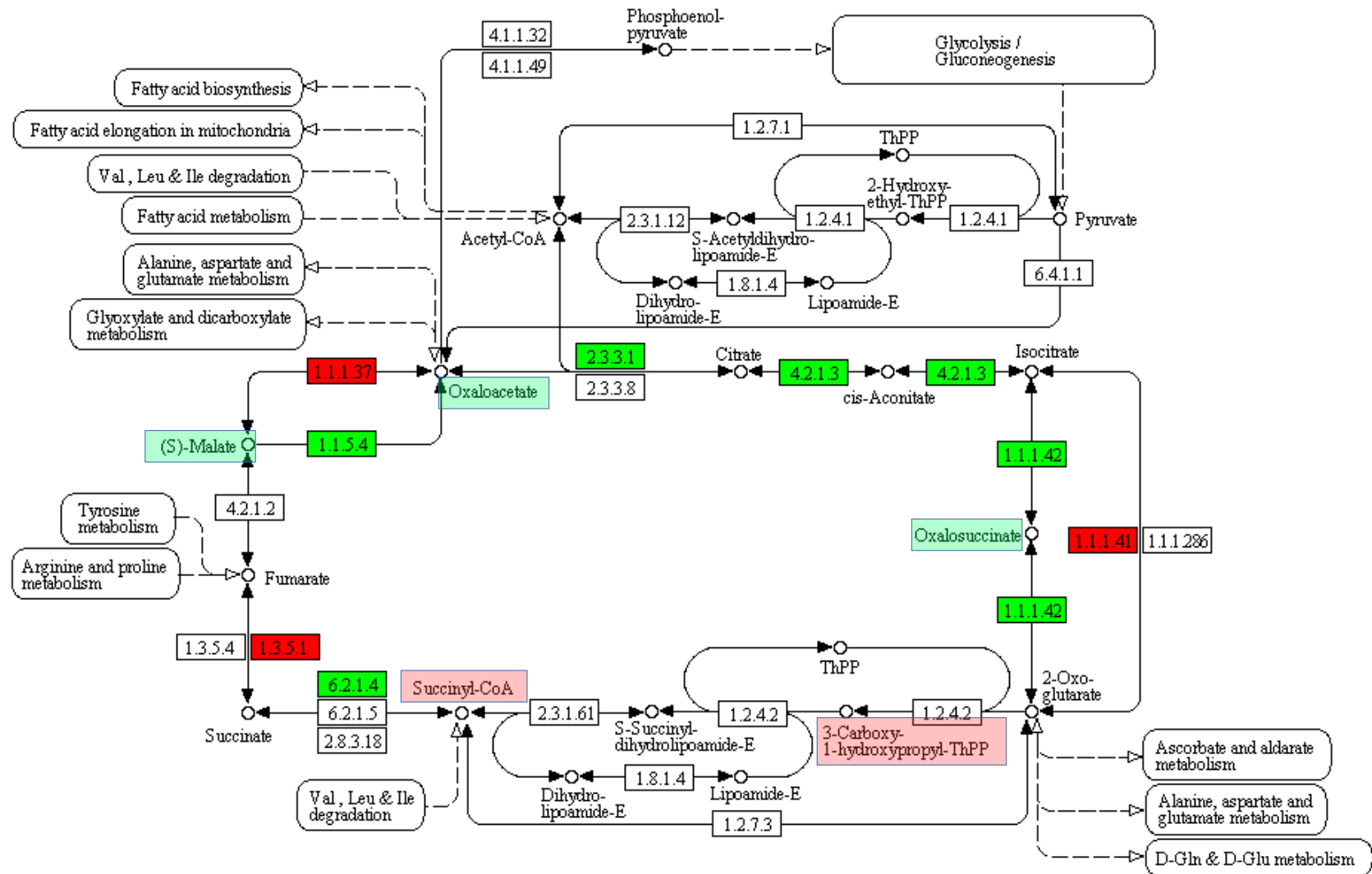
CITRATE CYCLE (TCA CYCLE)



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Pathway Analysis

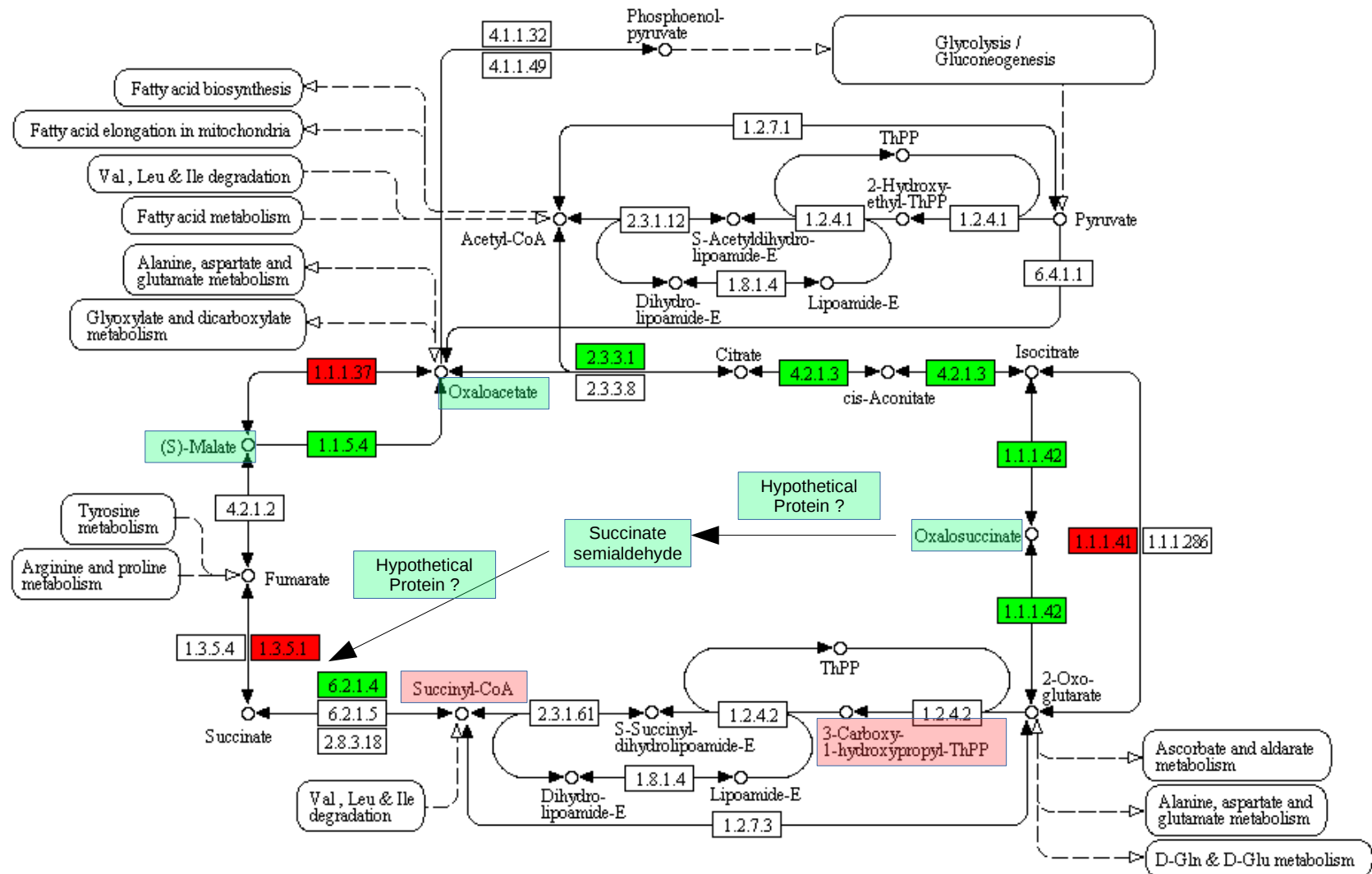
CITRATE CYCLE (TCA CYCLE)



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Pathway Analysis

CITRATE CYCLE (TCA CYCLE)



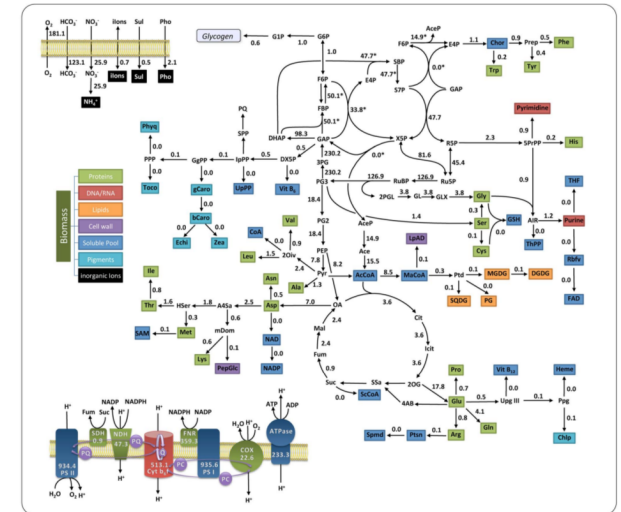
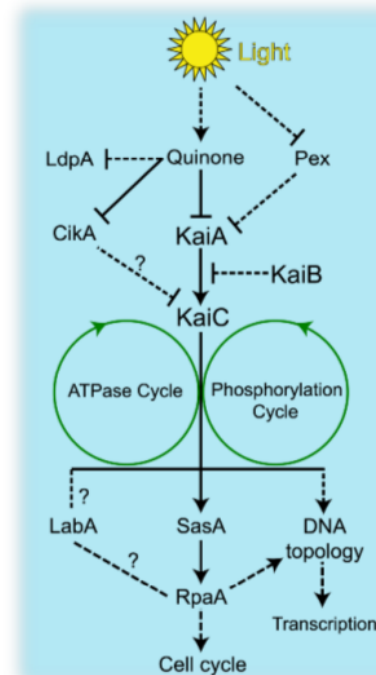
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Identification of Unknown Metabolites

- Find similarities to known metabolites
 - Gaussian Graphical Models
 - Fragmentation Trees
- Improve by incorporating transcriptome data

Our Data

- Cyanobacteria: *Synechocystis* sp. PCC 6803
- Modelorganism
- Focus on
 - Biofuels!
 - Circadian Clock



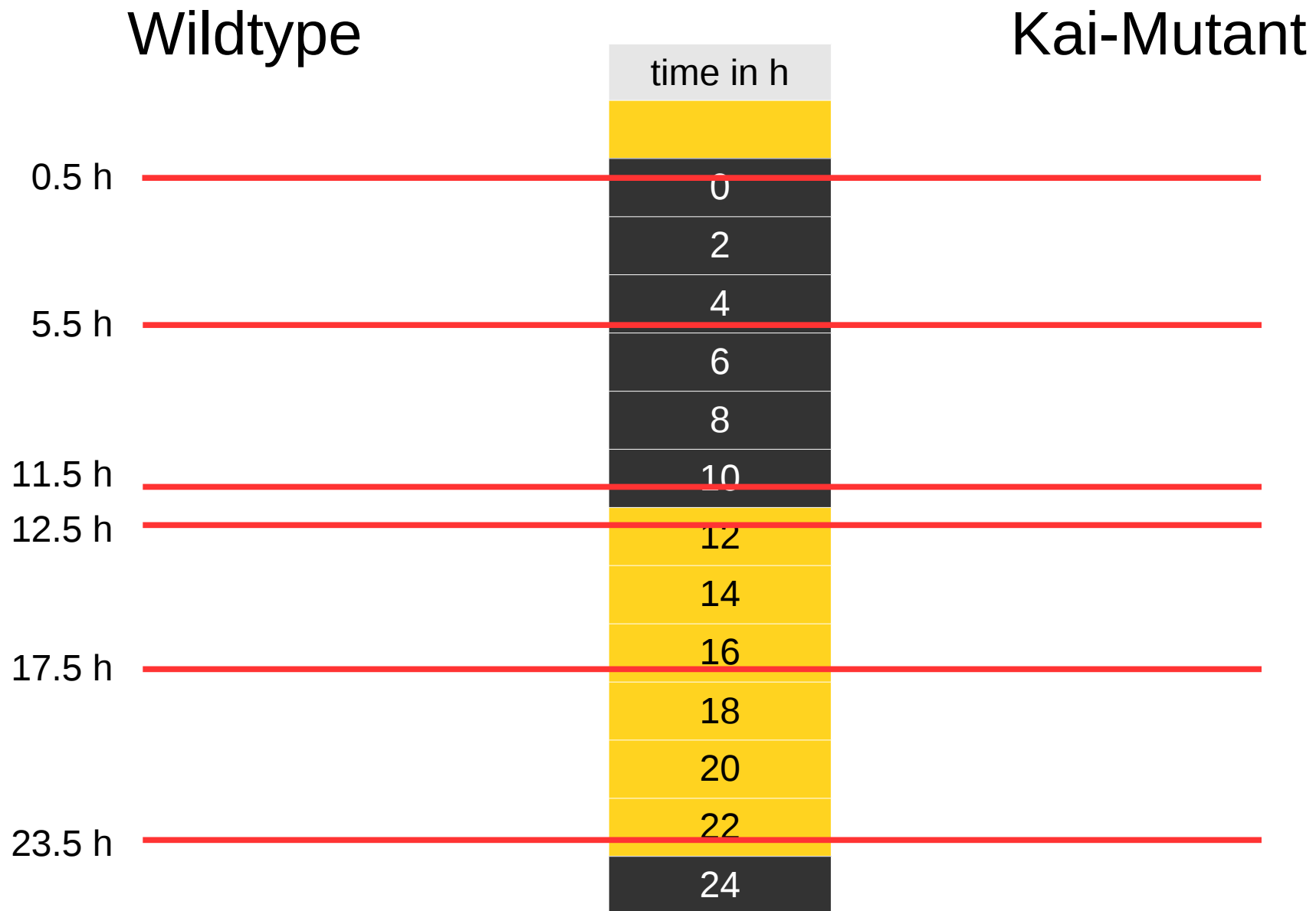
Knoop et al., 2013, PLoS Comput Biol, 9(6):e1003081.

Dong et al., 2010, Curr Opin Genet Dev, 20(6):619-25.

http://protist.i.hosei.ac.jp/PDB/images/Prokaryotes/Chroococcaceae/Synechocystis/sp_01.jpg

http://www.aiche.org/sites/default/files/styles/chenected_medium/public/chenected/2012/01/2012-01-23_1057-joule-bioreactor-leandor-e1327350289413.png

Our Data – RNASeq + MS



Thanks for your Attention!



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Carl Zeiss Stiftung