

Unit 12 - Week 9

Course outline

How does an NPTEL online course work?

Prerequisite Assignment

MATLAB

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week 4

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Week 9

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- 72 -Integrating Regulatory Information into Constraint-Based Models
- 73 - Elementary Modes
- 74 - Elementary Modes
- 75 -Constraint-based Modelling of Metabolic Networks: Applications
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- 77 - Constraint-based Modelling of Metabolic Networks: Applications
- 78 - Lab: Gene Deletions
- Quiz : Practice Assignment 9
- Quiz : Assignment 9
- Computational Systems Biology : Week 9 Feedback Form

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Assignment 9

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-01, 23:59 IST.

Download the Helicobacter pylori 26695 model 'iIT341.mat' from <http://bigg.ucsd.edu/> . Maximize the biomass using Cobra Toolbox.

1) What is the maximum biomass flux?

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.68,0.70

2 points

Instead of biomass, maximize reaction 148: 'Fatty acid biosynthesis (n-C14:0)'

2) What is the maximum flux of reaction 148?

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.10,0.12

2 points

A proteomically derived model of erythrocyte metabolism in Homo sapiens is given in 'iAB_RBC_283.mat'. Download the file from <http://bigg.ucsd.edu/> . Use the Cobra Toolbox to analyse the effect of the following:

- (A) Single reaction deletion
- (B) Single gene deletion
- (C) Double gene deletion

Answer the following based on the results obtained:

3) For single reaction deletion, the number of reactions for which the growth rate upon deletion becomes less than 10 % of the wild-type growth rate:

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 8,13

2 points

4) For single gene deletion, the number of genes for which the growth rate upon deletion becomes less than 10 % of the wild-type growth rate:

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 4,8

0 points

5) For double gene deletion, the percentage of gene pairs for which the growth rate upon deletion becomes less than 10% of the wild-type growth rate:

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 3.3,3.5

0 points