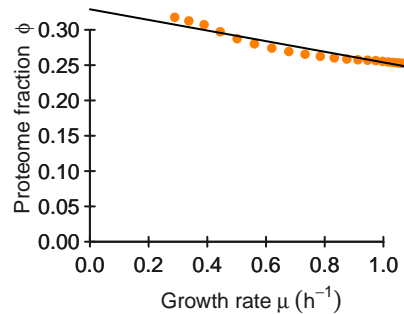
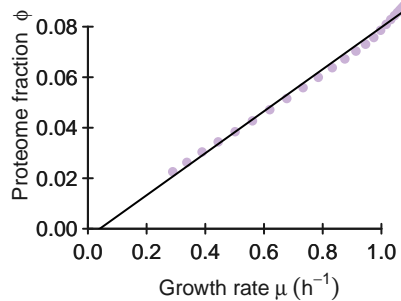


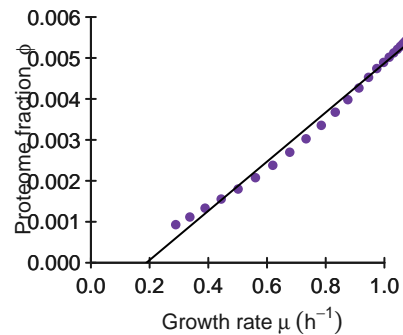
Maint



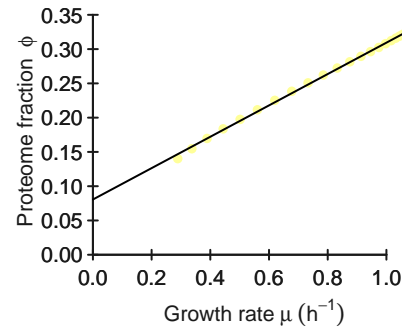
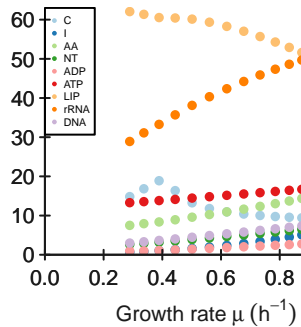
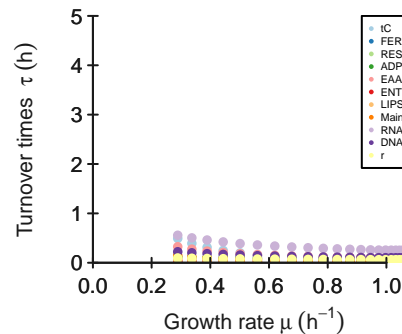
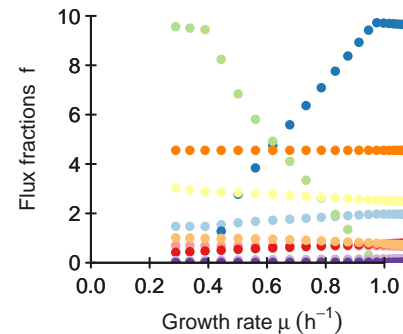
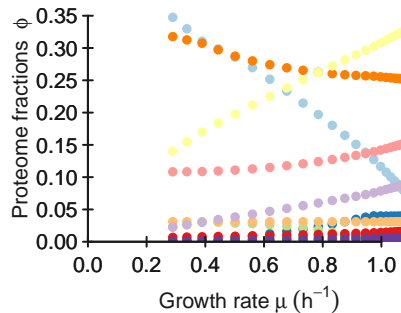
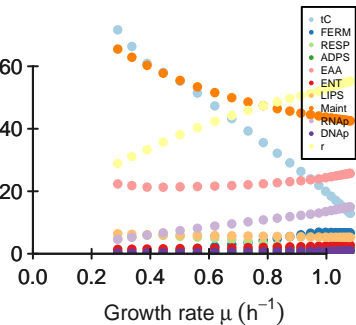
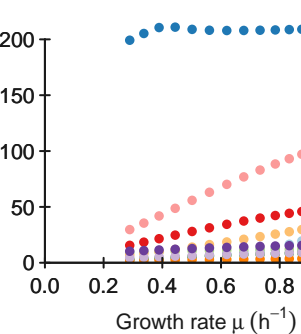
RNAP



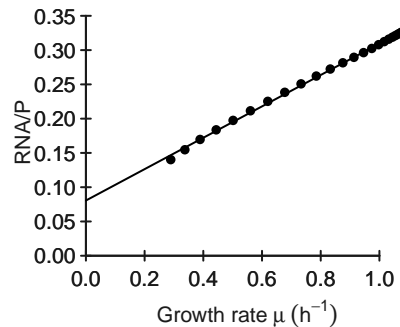
DNAP



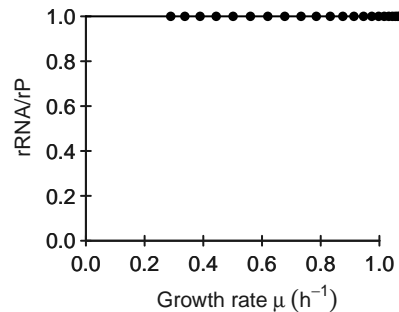
r

Metabolite concentrations  $c^m$  (g/L)Protein concentrations  $p$  (g/L)Apparent turnover numbers  $k_{app}$  ( $\text{h}^{-1}$ )

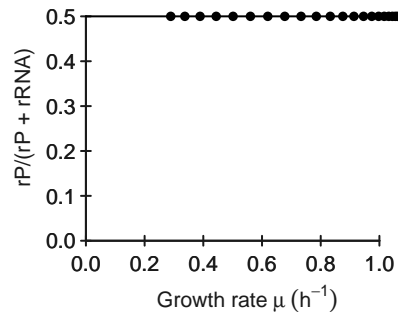
RNA/P



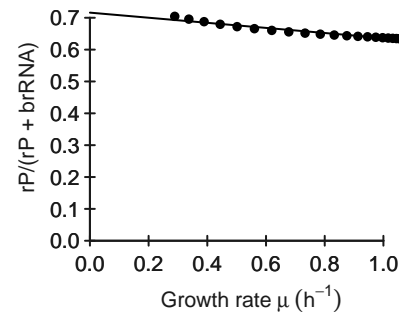
rRNA/rP



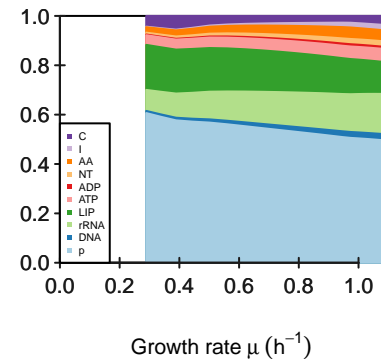
rP/(rP + rRNA)



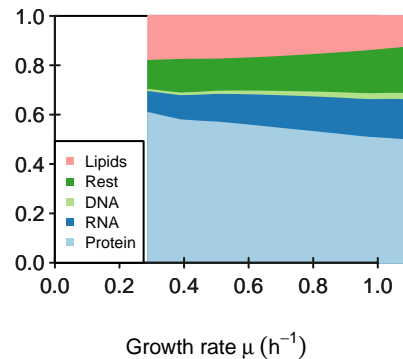
Protein mass fraction in ribosome



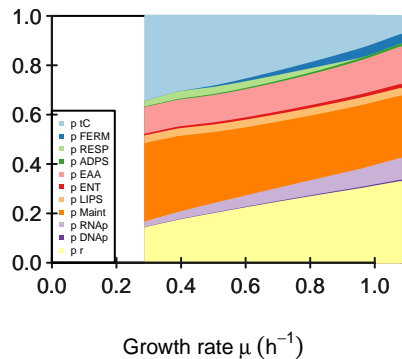
Relative biomass composition



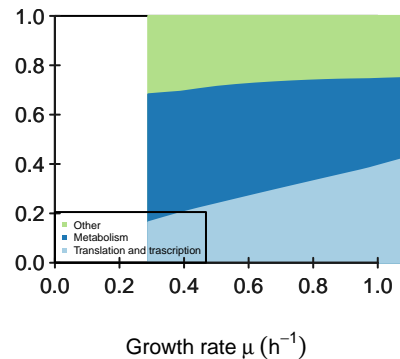
Predicted biomass



Proteome composition



Proteome sectors



keep\_ribosome\_kcat FALSE  
keep\_transport\_kcat FALSE  
maintenance\_fun constant

## M

[illegible]

**K**

[illegible]

**KA**[illegible]

**kcat**[illegible]



**Keq**

|             |                    |                    |                    |                    |                    |                    |                    |                    |                    |                     |                     |
|-------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|
| <b>[1,]</b> | <b>[,1]</b><br>Inf | <b>[,2]</b><br>Inf | <b>[,3]</b><br>Inf | <b>[,4]</b><br>Inf | <b>[,5]</b><br>Inf | <b>[,6]</b><br>Inf | <b>[,7]</b><br>Inf | <b>[,8]</b><br>Inf | <b>[,9]</b><br>Inf | <b>[,10]</b><br>Inf | <b>[,11]</b><br>Inf |
|-------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|

## phi input

|      |       |       |       |       |       |       |       |        |        |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|
| [1,] | [,1]  | [,2]  | [,3]  | [,4]  | [,5]  | [,6]  | [,7]  | [,8]   | [,9]   | [,10] | [,11] |
|      | 0.043 | 0.023 | 0.023 | 0.002 | 0.165 | 0.021 | 0.031 | 0.3036 | 0.0794 | 0.002 | 0.307 |

**average saturation input**

3

## minimal phi constraint

|      |      |      |      |      |      |      |       |      |      |       |       |
|------|------|------|------|------|------|------|-------|------|------|-------|-------|
| [1,] | [,1] | [,2] | [,3] | [,4] | [,5] | [,6] | [,7]  | [,8] | [,9] | [,10] | [,11] |
|      | 0    | 0    | 0    | 0    | 0    | 0    | 0.031 | 0    | 0    | 0     | 0     |

## minimal f constraint

|      |           |           |           |           |           |           |           |                  |      |           |            |            |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------|-----------|------------|------------|
| [1,] | [,1]<br>0 | [,2]<br>0 | [,3]<br>0 | [,4]<br>0 | [,5]<br>0 | [,6]<br>0 | [,7]<br>0 | 4.55437091503269 | [,8] | [,9]<br>0 | [,10]<br>0 | [,11]<br>0 |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------|-----------|------------|------------|