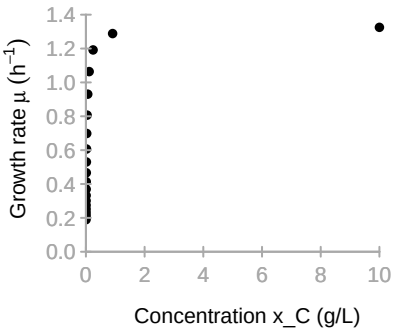
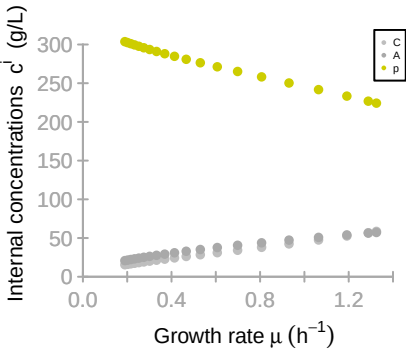
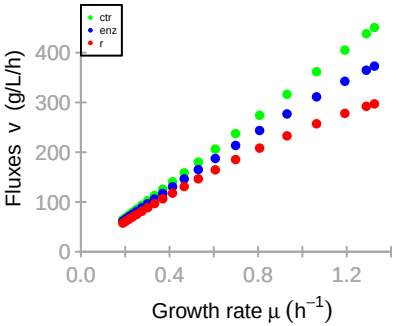
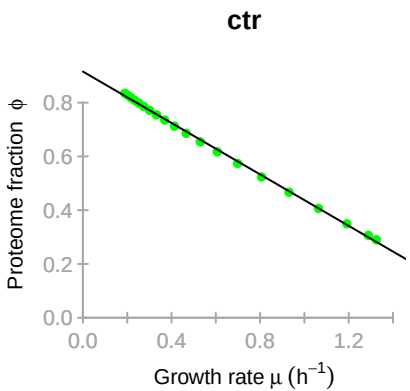
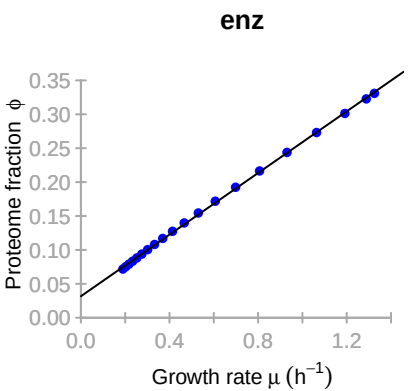
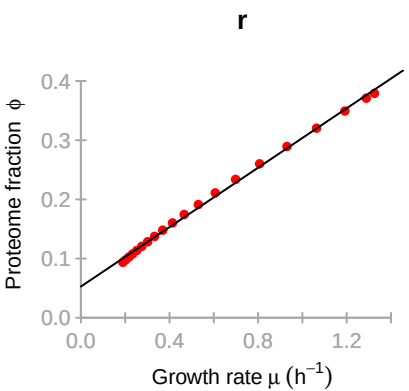

Growth rate μ (h^{-1})
Concentration x_C (g/L)

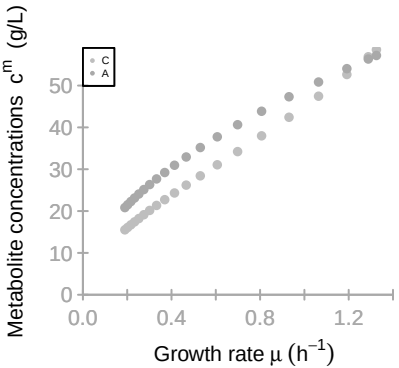

Internal concentrations c^i (g/L)
C
A
p
Growth rate μ (h^{-1})

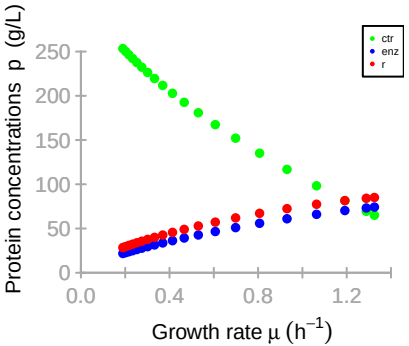

Fluxes v (g/L/h)
ctr
enz
r
Growth rate μ (h^{-1})

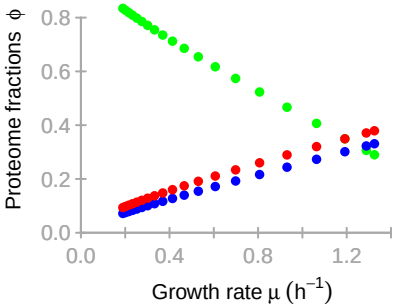

ctr
Proteome fraction ϕ
Growth rate μ (h^{-1})

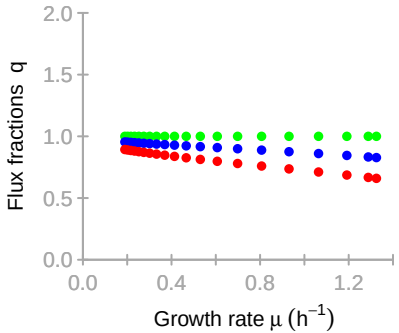

enz
Proteome fraction ϕ
Growth rate μ (h^{-1})

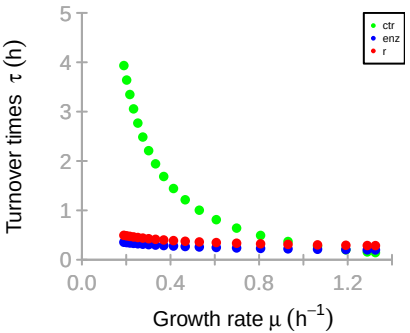

r
Proteome fraction ϕ
Growth rate μ (h^{-1})

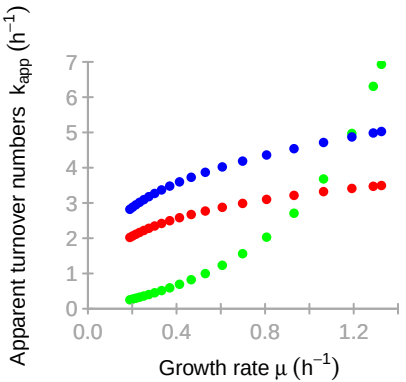

Metabolite concentrations c^m (g/L)
C
A
0
10
20
30
40
50
0.0
0.4
0.8
1.2
Growth rate μ (h^{-1})


Protein concentrations p (g/L)
ctr
enz
r
0
50
100
150
200
250
0.0
0.4
0.8
1.2
Growth rate μ (h^{-1})


Proteome fractions ϕ
0.0
0.2
0.4
0.6
0.8
0.0
0.4
0.8
1.2
Growth rate μ (h^{-1})


Flux fractions q
0.0
0.5
1.0
1.5
2.0
0.0
0.4
0.8
1.2
Growth rate μ (h^{-1})


Turnover times τ (h)
ctr
enz
r
0
1
2
3
4
5
0.0
0.4
0.8
1.2
Growth rate μ (h^{-1})


Apparent turnover numbers k_{app} (h^{-1})
0
1
2
3
4
5
6
7
0.0
0.4
0.8
1.2
Growth rate μ (h^{-1})

M

	ctr	enz	r
C	1	−1	0
A	0	1	−1
p	0	0	1

K

	ctr	enz	r
x_C	0.1	0	0
C	0	23	0
A	0	0	41
p	0	0	0

	ctr	enz	r
x_C	0	0	0
C	0	0	0
A	0	0	0
p	0	0	0

kcat

	ctr	enz	r
[1,]	7	7	6
[2,]	0	0	0

Keq

	[,1]	[,2]	[,3]
[1,]	Inf	Inf	Inf

phi input

	[,1]	[,2]	[,3]
[1,]	0.35	0.4	0.25

average saturation input

3

minimal phi constraint

	[,1]	[,2]	[,3]
[1,]	0	0	0

minimal q constraint

	[,1]	[,2]	[,3]
[1,]	0	0	0