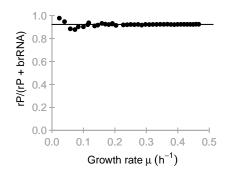
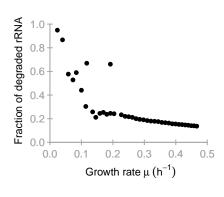
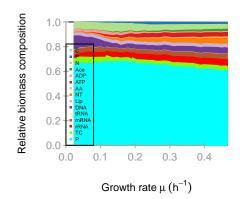
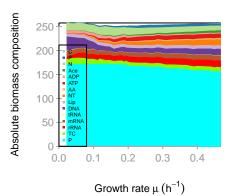


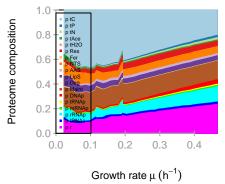
### Protein mass fraction in ribosome

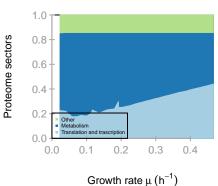












	tC	tΡ	tN	tAce	tH2O	Res	Fer	NTS	AAS	LipS	Deg	Maint	DNAp	tRNAp	mRNAp	rRNAp	tRNAc	r
С	1	0	0	0	0	-0.002	-0.02	-0.175	-0.76	-0.112	ō	0	Ö	Ö	Ö	Ö	0	0
P	0	1	0	0	0	-0.124	-0.12	0.046	0	0.102	0	0	0	0	0	0	0.002	0.008
N	0	0	1	0	0	0	0	-0.079	-0.24	-0.004	0	0	0	0	0	0	0	0
Ace	0	0	0	-1	0	0.002	0.02	0	0	0	0	0	0	0	0	0	0	0
H2O	0	0	0	0	1	0.072	0.07	-0.054	0	-0.064	0	0	0	0	0	0	-0.001	-0.004
ADP	0	0	0	0	0	-0.874	0.91	0.657	0	0.774	0	1	0	0	0	0	0.013	0.053
ATP	0	0	0	0	0	0.926	-0.86	-0.692	0	-0.82	0	-1	0	0	0	0	-0.014	-0.057
AA	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	-0.005	0
NT	0	0	0	0	0	0	0	0.297	0	0	1	0	-1	-1	-1	-1	0	0
Lip	0	0	0	0	0	0	0	0	0	0.124	0	0	0	0	0	0	0	0
DNA	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
tRNA	0	0	0	0	0	0	0	0	0	0	-0.1	0	0	1	0	0	-0.98	0.934
mRNA	0	0	0	0	0	0	0	0	0	0	-0.1	0	0	0	1	0	0	0
rRNA	0	0	0	0	0	0	0	0	0	0	-0.8	0	0	0	0	1	0	0
TC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.985	-0.939
Р	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.005

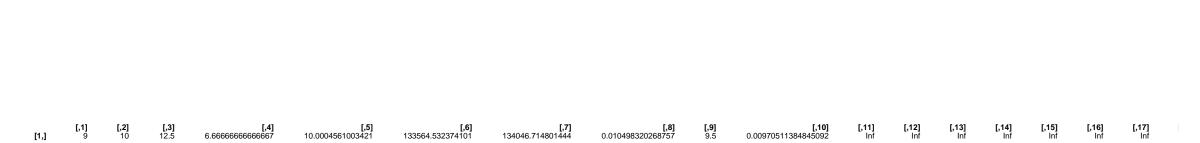
	tC	tΡ	tN	tAce	tH2O	Res	Fer	NTS	AAS	LipS	Deg	Maint	DNAp	tRNAp	mRNAp	rRNAp	tRNAc	r
x_C	1	0	0	0	0	0	0	0	0	0	Ō	0	0	0	0	0	0	0
x_P	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x_C x_P x_N	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x_Ace	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x_H2O	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
С	1	0	0	0	0	0.9	1	1	1	1	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0.9	1	0	0	0	0	0	0	0	0	0	1	1
N	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
Ace	0	0	0	15	0	13.5	15	0	0	0	0	0	0	0	0	0	0	0
Ace H2O ADP	0	0	0	0	0	803.7	893	893	0	893	0	0	0	0	0	0	893	893
ADP	0	0	0	0	0	0.9	1	1	0	0	0	1	0	0	0	0	0	1
ATP	0	0	0	0	0	0.9	1	1	0	1	0	1	0	0	0	0	1	1
AA NT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
NT	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0
Lip	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
DNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tRNA	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0
mRNA	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
rRNA	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0
TC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Р	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	tC	tP	tN	tAce	tH2O	Res	Fer	NTS	AAS	LipS	Deg	Maint	DNAp	RNAp	mRNAp	rRNAp	tRNAc	r
x_C	0	0	0	0	0	0	0	0	0	0	Ō	0	0	0	0	0	0	0
x_P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x_N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x_Ace	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
x_H2O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
С	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ace	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H2O ADP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AA NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lip	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DNÀ	0	0	0	0	0	0	0	0	0	0	0	0	10	10	10	10	0	0
tRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
rRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
TC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Р	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### kcat

	tC	tP	tN	tAce	tH2O	Res	Fer	NTS	AAS	LipS	Deg	Maint	DNAp	tRNAp	mRNAp	rRNAp	tRNAc	r
kcatf	9	40	25	10	43852	1386	2772	75	76	26	10	10	2	10	10	1	61011	6400
kcatb	1	4	2	1	4385	139	277	8	8	3	0	0	0	0	0	0	0	0

## Keq



# phi input

**[,9]** 0.05 **[,10]** 0.02 **[,11]** 0.01 **[,12]** 0.15 **[,13]** 0.01 **[,14]** 0.01 **[,15]** 0.01 **[,16]** 0.02 **[,17]** 0.05 **[,18]** 0.25



**[,8]** 0.05

**[,7]** 0.15

**[,6]** 0.1

**[,1]** 0.0989

[1,]

**[,3]** 0.01 **[,4]** 0.001 average saturation input

minimal phi coi	nstraint
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[1,]

minimal f constraint

[,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,18] 0 0 0 0 0,7 0 0 0 0 0 0 0 0 0 0 0 0 0

[1,]

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