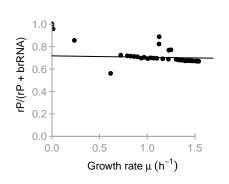
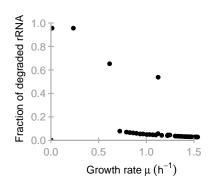
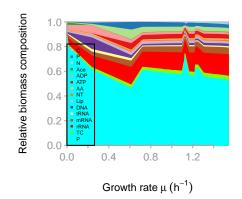
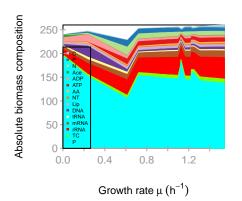


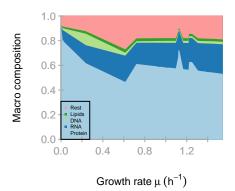
### Protein mass fraction in ribosome

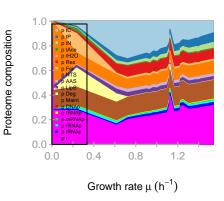


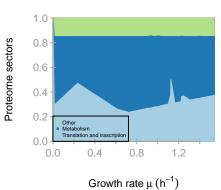












	tC	tP	tN	tAce	tH2O	Res	Fer	NTS	AAS	LipS	Deg	Maint	DNAp	tRNAp	mRNAp	rRNAp	tRNAc	r
С	1	0	0	0	0	-0.002	-0.02	-0.175	-0.76	-0.112	ŏ	0	Ō	Ö	Ö	Ō	0	0
P	0	1	0	0	0	-0.124	-0.12	0.046	0	0.102	0	0	0	0	0	0	0.002	0.008
N	0	0	1	0	0	0	0	-0.079	-0.24	-0.004	0	0	0	0	0	0	0	0
Ace	0	0	0	-1	0	0.002	0.02	0	0	0	0	0	0	0	0	0	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
P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.005

	tC	tP	tN	tAce	tH2O	Res	Fer	NTS	AAS	LipS	Deg	Maint	DNAp	tRNAp	mRNAp	rRNAp	tRNAc	r
x_C	0.5	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_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_Ace x_H2O	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
С	5	0	0	0	0	2	2	2	2	2	0	0	0	0	0	0	0	0
P	0	0	0	0	0	1	1	1	0	10	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
Ace	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Ace H2O	0	0	0	0	0	800	800	800	0	750	0	0	0	0	0	0	800	800
ADP	0	0	0	0	0	2	2	10	0	0	0	0	0	0	0	0	0	0
ATP	0	0	0	0	0	10	10	1	0	1	0	1	0	0	0	0	1	1
AA	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	1	0
NT	0	0	0	0	0	0	0	10	0	0	0	0	1	1	1	1	0	0
Lip	0	0	0	0	0	0	0	0	0	30	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	0	0	0	2	0
mRNA	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
rRNA	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
TC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
P	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

kcatf kcatb	<b>[,1]</b> 100 10	<b>[,2]</b> 40 4	<b>[,3]</b> 40 4	<b>[,4]</b> 40 2	<b>[,5]</b> 40000 4000	<b>[,6]</b> 900 90	[ <b>,7]</b> 900 90	<b>[,8]</b> 100 10	<b>[,9]</b> 100 10	[, <b>10]</b> 50 5	<b>[,11]</b> 10 0	<b>[,12]</b> 10 0	<b>[,13]</b> 200 0	<b>[,14]</b> 136 0	[ <b>,15]</b> 96 0	[ <b>,16]</b> 136 0	[ <b>,17]</b> 60000 0	<b>[,18]</b> 6000 0

# Keq

[1,]	<b>[,1]</b> 100	<b>[,2]</b> 10	<b>[,3]</b> 10	<b>[,4]</b> 200	<b>[,5]</b> 10	<b>[,6]</b> 20000	[, <b>7</b> ] 800	<b>[,8]</b> 0.625	<b>[,9]</b> 50	[,10] 2	<b>[,11]</b> Inf	[ <b>,12]</b> Inf	<b>[,13]</b> Inf	<b>[,14]</b> Inf	[, <b>15]</b> Inf	<b>[,16]</b> Inf	<b>[,17]</b> Inf	[, <b>18]</b> Inf

minimal phi constraint	ni constraint
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UI	13	LI	an	ı	ι	

onstraint	
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[,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,18] 0.015 0 0 0 0 0 0 0

minimal f con	straint
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UI	12	u	all	Iι

[1,] [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,1] [,1] [,1]