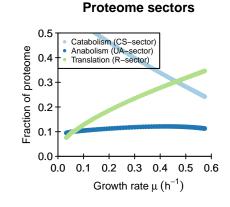


Growth rate  $\mu$  (h<sup>-1</sup>)



	tC	tW	ATPS	ADPS	EAA	ENT	LIPS	Maint	rRNAp	mRNAp	tRNAp	rRNase	mRNase	tRNAse	DNAp	tRNAc	r
С	1	0	-0.02	0	-1	-0.167	-0.18	0	0	0	0	0	0	0	0	0	0
AA	0	0	0	0	1	-0.167	0	0	0	0	0	0	0	0	0	-0.01	0
NT	0	0	0	-1	0	0.334	0	0	-1	-1	-1	1	1	1	-1	0	0
ADP	0	0	-0.98	1	0	0.666	0.82	1	0	0	0	0	0	0	0	0.05	0.05
ATP	0	0	0.98	0	0	-0.666	-0.82	-1	0	0	0	0	0	0	0	-0.05	-0.05
W	0	-1	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIP	0	0	0	0	0	0	0.18	0	0	0	0	0	0	0	0	0	0
rRNA	0	0	0	0	0	0	0	0	1	0	0	-1	0	0	0	0	0
mRNA	0	0	0	0	0	0	0	0	0	1	0	0	-1	0	0	0	0
tRNA	0	0	0	0	0	0	0	0	0	0	1	0	0	-1	0	-0.94	0.94
DNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
TC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.95	-0.95
р	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01

	tC	tW	ATPS	ADPS	EAA	ENT	LIPS	Maint	rRNAp	mRNAp	tRNAp	rRNase	mRNase	tRNAse	DNAp	tRNAc	r
x_C	0.1	0	0	0	0	0	0	0	Ö	Ō	Ö	0	0	0	Ö	0	0
x_W	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
С	4	0	2	0	2	2	2	0	0	0	0	0	0	0	0	0	0
AA	0	0	0	0	12	6	0	0	0	0	0	0	0	0	0	6	0
NT	0	0	0	6	0	12	0	0	6	6	6	0	0	0	6	0	0
ADP	0	0	1	2	0	2	2	0	0	0	0	0	0	0	0	0	0
ATP	0	0	7	0	0	4	4	4	0	0	0	0	0	0	0	4	4
W	0	6	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIP	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0
rRNA	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0
mRNA	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
tRNA DNA	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
DNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
р	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	tC	tW	ATPS	ADPS	EAA	ENT	LIPS	Maint	rRNAp	mRNAp	tRNAp	rRNase	mRNase	tRNAse	DNAp	tRNAc	r
x_C	0	0	0	0	0	0	0	0.025	Ö	Ö	Ö	0	0	0	Ö	0	0
x_W	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
AA	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
ADP	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
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIP	60	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
mRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
tRNA DNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DNA	0	0	0	0	0	0	0	0	9	9	9	0	0	0	8	0	0
TC	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

### kcat

	tC	tW	ATPS	ADPS	EAA	ENT	LIPS	Maint	rRNAp	mRNAp	tRNAp	rRNase	mRNase	tRNAse	DNAp	tRNAc	r
kcatf	26	23	2246	14	12	217	73	87	10	2	10	10	10	10	16	14679	792
kcatb	3	2	225	1	1	22	7	0	0	0	0	0	0	0	0	0	0

## Keq



# phi input

**[,8]** 0.2506 **[,9]** 0.0426 **[,10]** 0.0213 **[,11]** 0.0071 **[,12]** 0.002 **[,13]** 0.006 **[,17]** 0.284

**[,7]** 0.031

**[,6]** 0.023

**[,5]** 0.165

**[,3]** 0.027

**[,1]** 0.089

[1,]

average saturation input

minimal	phi	constraint
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minimal	f	constraint	

••	 ••	 u	•	J	v	• •	J	C.	u	

[,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,17] [,18] [,19] [,10] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,17] [,18] [,18] [,19] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,18] [,17] [,18] [,19] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,18] [,19] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,17] [,18] [,18] [,19] [,10] [,11] [,12] [,13] [,14] [,15] [,16] [,17] [,18] [,1

[1,]