







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

	tC	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	Ö	Ö	Ö	0	0	0	Ö	0	0
x_W	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
С	23	8	0	8	8	8	0	0	0	0	0	0	0	0	0	0
AA NT	0	0	0	11	4	0	0	0	0	0	0	0	0	0	4	0
	0	0	3	0	7	0	0	3	3	3	0	0	0	3	0	0
ADP	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0
ATP	0	7	0	0	3	3	3	0	0	0	0	0	0	0	3	3
LIP	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	19	0	0	0	0	0
mRNA	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
tRNA	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
DNA	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	3
р	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	tC	ATPS	ADPS	EAA	ENT	LIPS	Maint	rRNAp	mRNAp	tRNAp	rRNase	mRNase	tRNAse	DNAp	tRNAc	r
x_C	0	0	0	0	0	0	0.03	0	0	0	0	0	0	Ō	0	0
x_W	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
AA	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
ADP	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
LIP	30	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	75
mRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
tRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DNA	0	0	0	0	0	0	0	5	5	5	0	0	0	5	0	0
TC	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

kcat

	tC	ATPS	ADPS	EAA	ENT	LIPS	Maint	rRNAp	mRNAp	tRNAp	rRNase	mRNase	tRNAse	DNAp	tRNAc	r
kcatf	21	1169	11	54	20	58	77		1	9	10	10	10	15	10311	626
kcatb	2	117	1	5	2	6	0	0	0	0	0	0	0	0	0	0

Keq



phi input

[,10] 0.0071 **[,11]** 0.002

[,12] 0.006 **[,14]** 0.002 **[,15]** 0.023

[,16] 0.284

[,8] 0.0426 **[,9]** 0.0213

[,7] 0.2506

[,1] 0.11

[1,]

[,2] 0.023 **[,3]** 0.005 **[,4]** 0.032 **[,5]** 0.16 **[,6]** 0.031

average saturation input

minimal phi constraint

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21	

[1,]

[,2] [,3] [,4] [,5] 0 0 0

[,6] [,7] [,8] [,9] [,10] [,11] [,12] [,13] [,14] [,15] [,16] 0 0 0 0 0 0 0 0

minimal f constraint

[,6] [,7] [,8] [,9] [,10] [,11] [,12] [,13] [,14] [,15] [,16] 0 8 0 0 0 0 0 0 0 0

[,1] [,2] [,3] [,4] [,5] 0 0 0 0 0

[1,]