





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

maintenance\_fun constant

keep\_ribosome\_kcat FALSE keep\_transport\_kcat FALSE

	tC	tC2	RESP	FERM	EAA	ENT	RNAp	DNAp	r
С	1	1	-1	-1	0	0	Ō	Ō	0
I	0	0	0.8	0.5	-1	-0.9	0	0	0
AA	0	0	0	0	1	0	0	0	-0.8
NT	0	0	0	0	0	1	-1	-1	0
ATP	0	0	0.2	0.1	0	-0.1	0	0	-0.2
RNA	0	0	0	0	0	0	1	0	0
DNA	0	0	0	0	0	0	0	1	0
р	0	0	0	0	0	0	0	0	1

tC	tC2	RESP	FERM	EAA	ENT	RNAp	DNAp	r
0.1	0	0	0	0	0	Ō	Ō	0
0	0.1	0	0	0	0	0	0	0
25	25	1.8	9	0	0	0	0	0
0	0	0.6	3	1	1	0	0	0
0	0	0	0	3	0	0	0	1
0	0	0	0	0	3	1	1	0
0	0	2.4	12	0	4	0	0	4
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
	0.1 0	0.1 0 0 0.1	0.1 0 0   0 0.1 0   25 25 1.8   0 0 0.6   0 0 0   0 0 0   0 0 0	0.1 0 0 0   0 0.1 0 0   25 25 1.8 9   0 0 0.6 3   0 0 0 0   0 0 0 0   0 0 0 0	0.1 0 0 0 0   0 0.1 0 0 0   25 25 1.8 9 0   0 0 0.6 3 1   0 0 0 0 3   0 0 0 0 0	0.1 0 0 0 0 0   0 0.1 0 0 0 0   25 25 1.8 9 0 0   0 0 0.6 3 1 1   0 0 0 0 3 0   0 0 0 0 3 0   0 0 0 0 3	0.1 0 0 0 0 0 0   0 0.1 0 0 0 0 0   25 25 1.8 9 0 0 0   0 0 0.6 3 1 1 0   0 0 0 0 3 0 0   0 0 0 0 3 1	0.1 0 0 0 0 0 0   0 0.1 0 0 0 0 0 0   25 25 1.8 9 0 0 0 0   0 0 0.6 3 1 1 0 0   0 0 0 0 3 0 0 0   0 0 0 0 3 1 1   1 1 0 0 0   0 0 0 3 1 1

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	tC	tC2	RESP	FERM	EAA	ENT	RNAp	DNAp	r
x_C	0	0	0	0	0	0	Ō	Ō	0
$x_W$	0	0	0	0	0	0	0	0	0
С	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0
AA	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0	0
ATP	0	0	0	0	0	0	0	0	0
RNA	0	0	0	0	0	0	0	0	25
DNA	0	0	0	0	0	0	4	4	0
р	0	0	0	0	0	0	0	0	0

#### kcat

	40	<b>4</b> C2	DEED	EEDM	EAA	ENT	DNAn	DNAn		
kcatf kcatb	48.2	15.5	11.7	<b>FERM</b> 58.3 6	6.1	46.5	9.2	12.4	6.1	

## Keq

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]	[,9]
[1.]	2410	1937.5	9.36	38.8666666666667	18.3	6.975	Inf	Inf	Inf

# phi input

[1,]	<b>[,1]</b> 0.06	<b>[,2]</b> 0.005	<b>[,3]</b> 0.065	<b>[,4]</b> 0.004	<b>[,5]</b> 0.248	<b>[,6]</b> 0.035	<b>[,7]</b> 0.119	<b>[,8]</b> 0.003	<b>[,9</b> 0.461

### average saturation input

# minimal phi constraint

[1,]

#### minimal f constraint

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