





0.0

0.2

0.6

Growth rate μ (h⁻¹)

8.0

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	-1	-1	Ō	Ō	0
AA	0	0	0	0	1	0	0	0	-0.9
NT	0	0	0	0	0	1	-1	-1	0
ATP	0	0	1	0.5	0	0	0	0	-0.1
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

k

	tC	tC2	RESP	FERM	EAA	ENT	RNAp	DNAp	r
x_C	0.1	0	0	0	0	0	Ō	0	0
x_W	0	0.1	0	0	0	0	0	0	0
С	0	0	2.2	11	11	11	0	0	0
AA	0	0	0	0	0	0	0	0	2
NT	0	0	0	0	0	0	1	1	0
ATP	0	0	0	0	0	0	0	0	2
RNA	0	0	0	0	0	0	0	0	0
DNA	0	0	0	0	0	0	0	0	0
р	0	0	0	0	0	0	0	0	0

KA

	tC	tC2	RESP	FERM	EAA	ENT	RNAp	DNAp	r
x_C	0	0	0	0	0	0	0	0	0
x_W	0	0	0	0	0	0	0	0	0
С	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

	tC	tC2	RESP	FERM	EAA	ENT	RNAp	DNAp	r
kcatf	31	10	4.33333333333333	8.6666666666667	5	22	6	8	4
kcatb	0	0	0	0	0	0	0	0	0

Keq



phi input

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