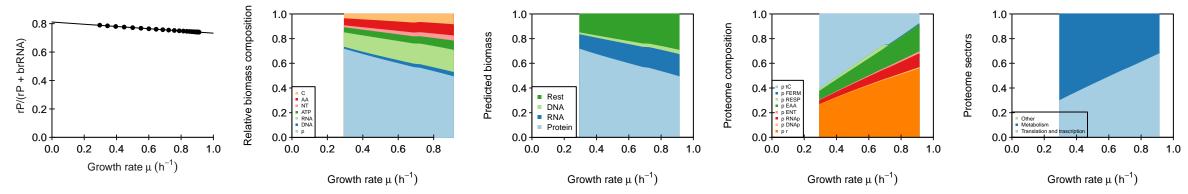


#### Protein mass fraction in ribosome



maintenance\_fun constant

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

	tC	FERM	RESP	EAA	ENT	RNAp	DNAp	r
С	1	-1	-1	-1	-0.45	Ō	0	0
AA	0	0	0	1	-0.45	0	0	-0.9
NT	0	0	0	0	1	-1	-1	0
ATP	0	0.5	1	0	-0.1	0	0	-0.1
RNA	0	0	0	0	0	1	0	0
DNA	0	0	0	0	0	0	1	0
р	0	0	0	0	0	0	0	1

K

	tC	FERM	RESP	EAA	ENT	RNAp	DNAp	r
x_C	0.1	0	0	0	0	Ō	Ō	0
$x_W$	0	10	20	0	0	0	0	0
С	0	6	12	6	6	0	0	0
AA	0	0	0	0	4	0	0	4
NT	0	0	0	0	0	4	4	0
ATP	0	0	0	0	2	0	0	2
RNA	0	0	0	0	0	0	0	0
DNA	0	0	0	0	0	0	0	0
р	0	0	0	0	0	0	0	0

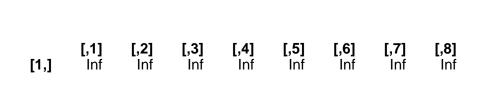
KA

	tC	FERM	RESP	EAA	ENT	RNAp	DNAp	r
x_C	0	0	0	0	0	0	0	0
$x_W$	0	0	0	0	0	0	0	0
С	0	0	0	0	0	0	0	0
AA	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0
ATP	0	0	0	0	0	0	0	0
RNA	0	0	0	0	0	0	0	40
DNA	0	0	0	0	0	4	4	0
р	0	0	0	0	0	0	0	0

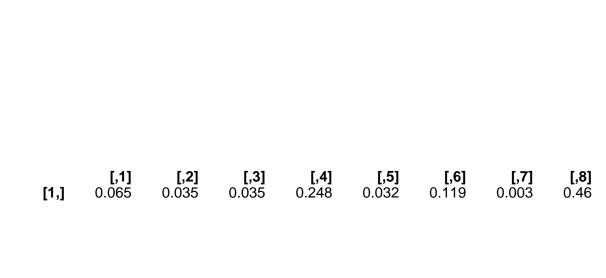
### kcat

	tC	FERM	RESP	EAA	ENI	RNAP	DNAP	r
kcatf	29	80	8	7	48	6	13	4
kcatb	0	0	0	0	0	0	0	0

## Keq



# phi input



## average saturation input

## minimal phi constraint

## minimal f constraint