





maintenance_fun constant

keep_ribosome_kcat FALSE keep_transport_kcat FALSE

| | tC | FERM | RESP | ADPS | EAA | ENT | LIPS | Maint | RNAp | DNAp | r |
|------|----|------|-------|------|-----|-------|-------|-------|------|------|------|
| С | 1 | -0.2 | -0.15 | 0 | 0 | 0 | 0 | 0 | Ō | Ō | 0 |
| - 1 | 0 | 0.1 | 0.1 | 0 | -1 | -0.17 | -0.18 | 0 | 0 | 0 | 0 |
| AA | 0 | 0 | 0 | 0 | 1 | -0.17 | 0 | 0 | 0 | 0 | -0.2 |
| NT | 0 | 0 | 0 | -1 | 0 | 0.34 | 0 | 0 | -1 | -1 | 0 |
| ADP | 0 | -0.8 | -0.85 | 1 | 0 | 0.66 | 0.82 | 1 | 0 | 0 | 0.8 |
| ATP | 0 | 0.8 | 0.85 | 0 | 0 | -0.66 | -0.82 | -1 | 0 | 0 | -0.8 |
| LIP | 0 | 0 | 0 | 0 | 0 | 0 | 0.18 | 0 | 0 | 0 | 0 |
| rRNA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| DNA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| р | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |

| | tC | FERM | RESP | ADPS | EAA | ENT | LIPS | Maint | RNAp | DNAp | r |
|------|-----|------|------|------|-----|-----|------|-------|------|------|---|
| x_C | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| x_W | 0 | 20 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| С | 0 | 12 | 2.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| AA | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| NT | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| ADP | 0 | 1 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATP | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 2 |
| LIP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| rRNA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DNA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| р | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | tC | FERM | RESP | ADPS | EAA | ENT | LIPS | Maint | RNAp | DNAp | r |
|------|----|------|------|------|-----|-----|------|-------|------|------|----|
| x_C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.02 | Ō | Ō | 0 |
| x_W | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| С | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ADP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LIP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| rRNA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| DNA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 |
| р | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

kcat

| | tC | FERM | KESP | ADPS | EAA | ENI | LIPS | waint | KNAP | DNAP | r |
|-------|------|--------|-------|------|-----|-------|------|-------|------|------|----|
| kcatf | 67.2 | 1174.1 | 234.9 | 14.4 | 11 | 154.3 | 63.9 | 39.7 | 6.6 | 16.6 | 32 |
| kcatb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Keq



phi input



average saturation input

minimal phi constraint

| .1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10] | 1] | [,2] | [,3] | [,4] | [,5] | [,6] | [,7] | [,8] | [,9] | [,10] | [,11] |
|---|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| 0 0 0 0 0 0 0.031 0 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.031 | 0 | 0 | O | 0 |

[1,]

minimal f constraint

| | [.1] | ſ .2 1 | [,3] | [.4] | [,5] | [.61 | [,7] | [,8] | [,9] | [.10] | [,11] |
|------|------|---------------|------|------|------|-------------|------|------------------|------|-------|-------|
| [1,] | 0 | | | | | | | 4.55437091503269 | | | |