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| **Name** | **Value** | **Unit** | **Description** |
| KHSL,W-C | 0.5\*10-3 | s−1 | transfer coefficient through the membrane |
| Number of AfeR /cell | 1010 | Nb/cell | number of AfeR proteins per E.coli cell |
| K eq, AfeR-HSL | 3.8\*10-8 | mol/L | equilibrum constant of the AfeR-HSL complexation |
| DspB DNA,0/cell | 6.6\*10-22 | mol/cell | total number of DspB DNA per cell |
| K a, AfeR-HSL | 3.8\*10-8 | mol/L | activation constant of the AfeR-HSL complex |
| k p, afeR | 0.8 | s−1 | afeR promoter influence |
| k transcript | 62 | nucleotides/s | *E.coli* transcription rate |
| RNA polymerase/DspB gene | 5.55 | / | number of RNA polymerase per DspB gene |
| DNA length (DspB) | 1218 | nucleotides | number of nucleotides on the DspB gene |
| Vintracell | 4.2\*10-15 | L | volume of a bacterial cell (L) |
| k translation | 100 | nucleotides/s | *E.coli* translation rate |
| Ribosomes/DspB mRNA | 8.04 | / | number of ribosomes per DspB mRNA |
| RNA length (DspB) | 1218 | nucleotides | number of nucleotides on the DspB mRNA |
| Kdeg,DspB | 1\*10-3 | s−1 | DspB degradation constant |
| Kdeg,DspB mRNA | 5\*10-3 | s−1 | DspB mRNA degradation constant |
| KDspB,C-W | 0.5\*10-3 | s−1 | transfer coefficient through the membrane |
| k cat,DspB | 3\*108 | s−1 | catalytic constant of the DspB enzyme |
| $$KM,D$$ | 0.8\*10-3 | mol/L | Michaelis constant of the DspB enzyme |
| EntE DNA,0/cell | 6.6\*10-22 | mol/L | total number of EntE DNA per cell |
| RNA polymerase/EntE gene | 45.6 | / | number of RNA polymerase per DspB gene |
| DNA length (EntE) | 10000 | nucleotides | number of nucleotides on the DspB gene |
| Ribosomes/EntE mRNA | 66 | / | number of ribosomes per EntE mRNA |
| RNA length (EntE) | 10000 | nucleotides | number of nucleotides on the EntE mRNA |
| Kdeg,EntE | 5\*10-4 | s−1 | EntE degradation constant |
| Kdeg,EntE mRNA | 5\*10-3 | s−1 | EntE mRNA degradation constant |
| k cat,EntE | 5 | s−1 | catalytic constant of the EntE enzyme |
| [S]C | 1 | mol/L | substrate concentration |
| KM,E | 1.2 | mol/L | Michaelis constant of the EntE enzyme |
| KDspB,C-W | 0.5\*10-3 | s−1 | transfer coefficient through the membrane |
| KEnt-Fe | 1051 | M-1 | chelation coefficient of enterobactin to Fe3+ |
| Ksp,Fe(OH)3 | 10-39 | s−1 | precipitation coefficient of Fe(OH)3 |