**Supplementary File 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Para-meter** | **Biological meaning** | **Unit** | **Description** |
|  |  | /min | This parameter was estimated as , where is the number of RNAPs normalized by the number of proteins; is the fraction of RNAPs engaged in transcription, and is the mean mRNA synthesis time. |
|  |  | /min | This parameter was estimated by , where is the number of ribosomes normalized by the number of proteins, and is the mean protein synthesis time. |
|  | Saturation level of DNA with respect to RNAP binding | 1/ | This parameter was estimates from , where is measured in this work and , the mean genome copy. |
|  | Saturation level of mRNA with respect to ribosome binding | 1/ | This parameter was estimated as , where is measured in this work and , the mRNA concentration. |
|  | mRNA degradation rate | 1/min | , where is the mRNA lifetime |
|  |  |  | Cell volumes of different culture conditions were measured in this work. |
|  |  |  | Cell area of different culture conditions was measured in this work. |
|  | Average genome concentration  of normal-growing cells | genome/ | Estimated by averaging the genome concentration over the cell cycle, see Appendix 1 for details. |