**Appendix 2 – Supplementary File 1**

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| **Symbol** | **Parameter** | **Value** | **Source** |
| $$X$$ | Number of mRNAs (per cell) | 2800 | Estimated from (Bremer and Dennis, 2008) |
| $$Y$$ | Number of proteins (106/cell) | 5.29 | Estimated from (Bremer and Dennis, 2008) |
| $$X\_{ini}$$ | Number of mRNAs for a newborn cell  | 2020 | Calculated as$$X\_{ini}=X/(2log2)$$ |
| $$Y\_{ini}$$ | Number of proteinsfor a newborn cell (106) | 3.82 | Calculated as$$Y\_{ini}=Y/(2log2)$$ |
| $$n\_{RNAP}$$ | Number of RNAPsin the cell (103) | 5.7 | Estimated from (Bremer and Dennis, 2008) |
| $$n\_{protein}$$ | Number of proteinsin the cell (106) | 5.29 | Estimated from (Bremer and Dennis, 2008) |
| $$θ\_{RNAP}$$ | Fraction of RNAPs relative to the total number of proteins  | 0.00108 | $$θ\_{RNAP}=n\_{RNAP}/n\_{protein}$$ |
| $$β\_{mRNA}$$ | Fraction of RNAPs involved in mRNA synthesis  | 0.18 | Estimated from (Bremer et al., 2003). |
| $$ T\_{RNAP}$$ | Mean transcription time to generate one mRNA molecule (min) | 0.33 | Estimated from (Bremer and Dennis, 2008) |
| $$r\_{1}$$ | Bulk transcription rate (10-3/min) | 1.99 | $$r\_{1}=θ\_{RNAP}β\_{mRNA} /T\_{RNAP}$$ |
| $$n\_{ribo}$$ | Number of ribosomesin a cell (103) | 26 | Estimated from (Bremer and Dennis, 2008) |
| $$n\_{protein}$$ | Number of proteinsin a cell (106) | 5.29 | Estimated from (Bremer and Dennis, 2008) |
| $$θ\_{ribo}$$ | Ratio between ribosome number and protein number (10-3) | 4.91 | $$θ\_{ribo}=n\_{ribo}/n\_{protein}$$ |
| $$ T\_{ribo}$$ | Mean translation time for one protein molecule (min) | 0.25 | Estimated from (Bremer and Dennis, 2008) |
| $$r\_{2}$$ | Bulk translation rate (10-3/min) | 20.0 | $$r\_{2}=θ\_{ribo} /T\_{ribo}$$ |