**S6 Table. Parameters used for the simulation of intracellular IAV replication.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | | **Description** | **Value** | **Unit** | **Source, comment** |
|  | number of  high-affinity binding sites | | 150 | *sites* | [1] |
|  | number of  low-affinity binding sites | | 1000 | *sites* | [1] |
|  | distance between two adjacent ribosomes | | 160 | *nucleotides* | [2] |
|  | fraction of  fusion-competent virions | | 0.51 | *–* | [3] |
|  | fraction of  M2-encoding mRNAs | | 0.02 | *–* | based on ratio of M2 to M1 in a virion |
|  | fraction of  NEP-encoding mRNAs | | 0.125 | *–* | [4] |
|  | attachment to high-affinity binding sites | | 8.09 x 10-2 | *sites-1∙h-1* | adjusted to data in [1] |
|  | attachment to low-affinity binding sites | | 4.55 x 10-4 | *sites-1∙h-1* | adjusted to data in [1] |
|  | binding of NP to  RdRp-RNA complexes | | 3.01 x 10-4 | *molecule-1∙h-1* | [3] |
|  | binding of RdRp-complexes  to RNA | | 1 | *molecule-1∙h-1* | [3] |
|  | degradation of mRNA | | 0.33 | *h-1* | [3] |
|  | degradation of nascent cRNA/vRNA | | 36.36 | *h-1* | [3] |
|  | degradation of RNPs | | 0.09 | *h-1* | [3] |
|  | degradation of RdRp-RNA complexes | | 4.25 | *h-1* | [3] |
|  | endocytosis | | 4.8 | *h-1* | [3] |
|  | equilibrium constant of high-affinity sites | | 1.13 x 10-2 | *sites-1* | [1] |
|  | equilibrium constant of low-affinity sites | | 8.33 x 10-5 | *sites-1* | [1] |
|  | NEP binding and nuclear export | | 1.00 x 10-6 | *molecule-1∙h-1* | adjusted to [5] |
|  | fusion with endosomes | | 3.21 | *h-1* | [3] |
|  | formation of RdRp-complexes | | 1 | *molecule-2∙h-1* | rapid formation is assumed |
|  | protein synthesis | | 64800 | *nucleotides∙h-1* | [6] |
|  | influence of proteins on virus release | | 10 | *virions* | [3] |
|  | length of segment 1’s mRNA | | 2320 | *nucleotides* | [7] |
|  | length of segment 2’s mRNA | | 2320 | *nucleotides* | [7] |
|  | length of segment 3’s mRNA | | 2211 | *nucleotides* | [7] |
|  | length of segment 4’s mRNA | | 1757 | *nucleotides* | [7] |
|  | length of segment 5’s mRNA | | 1540 | *nucleotides* | [7] |
|  | length of segment 6’s mRNA | | 1392 | *nucleotides* | [7] |
|  | length of segment 7’s unspliced mRNA | | 1005 | *nucleotides* | [7] |
|  | length of segment 8’s unspliced mRNA | | 868 | *nucleotides* | [7] |
|  | average length of a vRNA | | 1700 | *nucleotides* | based on [7] |
|  | Number of RdRP-complexes  in a virion | | 45 | *molecules∙virion-1* | [7] |
|  | number of HA molecules in a virion | | 500 | *molecules∙virion-1* | [7] |
|  | number of NA molecules in a virion | | 100 | *molecules∙virion-1* | [7] |
|  | Number of NP molecules  in a virion | | 1000 | *molecules∙virion-1* | [7] |
|  | number of M1 molecules in a virion | | 3000 | *molecules∙virion-1* | [7] |
|  | number of M2 molecules in a virion | | 40 | *molecules∙virion-1* | [7] |
|  | number of NEP molecules  in a virion | | 165 | *molecules∙virion-1* | [7] |
|  | nucleotides bound by one M1 molecule | | 200 | *nucleotides* | [8] |
|  | nucleotides bound by one NP molecule | | 24 | *nucleotides* | [9] |

Supporting information references

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