**Table EV1:** Parameter values for the model of Rata et al. 2018, used for the simulations shown in Figure 1, 2 and EV2. Compared to the original work we rescaled all kinetic parameters, except those indicated in bold, by a factor of 0.025 to account for the duration of G2-phase of several hours (right column). The total cdk2-cyclin A concentration is varied to model the differences between cells.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Name in code** | **Description** | **Value** | **Ratio to parameters in Rata et al. (2018)** |
|  | kapp1 | Constitutive dephosphorylation and thereby activation of PP1 | 0.01725 | 0.025 |
|  | kapp1a | Dephosphorylation of PP1 by dephosphorylated PP1 in trans | 1.0581 | 0.025 |
|  | kipp1 | Constitutive phosphorylation and hence inactivation of PP1 | 0.0027 | 0.025 |
|  | kipp1C | Phosphorylation of PP1 by Cdk1 | 1.1323 | 0.025 |
|  | kPP1Gw | Dephosphorylation of Gwl by PP1 | 27.7086 | 0.025 |
|  | kass | Association of pENSA with PP2A:B55 | 925.9211 | 0.025 |
|  | kdis | Dissociation of the pENSA:PP2A:B55 complex | 0.0132 | 0.025 |
|  | kcatB55 | Dephosphorylation of pENSA when in complex with PP2A:B55 | 1.5507 | 0.025 |
|  | kGwENSA | Phosphorylation of ENSA by Gwl | 31.3216 | 0.025 |
|  | kppxGwl | Basal dephosphorylation of Gwl | 0.234 | 0.025 |
|  | **kcBc1Sub** | **Phosphorylation of the substrate by Cdk1** | **0.12** | **0.250** |
|  | **kB55Sub** | **Dephosphorylation of the substrate by PP2A:B55** | **0.8895** | **0.250** |
|  | kcBc1G | Phosphorylation of Gwl by Cdk1 | 0.35895 | 0.025 |
|  | kB55G | Dephosphorylation of Gwl by PP2A:B55 | 744.8454 | 0.025 |
|  | kcAc2G | Phosphorylation of Gwl by Cdk2 | 0.2874 | 0.025 |
|  | k25S | Dephosphorylation of Y15 of Cdk1 by unphosphorylated Cdc25 | 0.0075 | 0.025 |
|  | k25F | Dephosphorylation of Y15 of Cdk1 by phosphorylated Cdc25 | 1.4117 | 0.025 |
|  | kweeS | Phosphorylation of Y15 of Cdk1 by phosphorylated Wee1 | 0.0075 | 0.025 |
|  | kweeF | Phosphorylation of Y15 of Cdk1 by unphosphorylated Wee1 | 70.9406 | 0.025 |
|  | kcBc1W1 | Phosphorylation of Wee1 by Cdk1 | 1.9698 | 0.025 |
|  | **kcBc125** | **Phosphorylation of Cdc25 by Cdk1** | **0.19698** | **0.0025** |
|  | kppxY15 | Dephosphorylation of Wee1 and Cdc25 by a constitutive phosphatase | 0.0075 | 0.025 |
|  | kcAc2W1 | Phosphorylation of Wee1 by Cdk2 | 0.1644 | 0.025 |
|  | **kplk1225** | **Phosphorylation of Cdc25 by Plk1** | **0.01644** | **0.0025** |
|  | kB55W1 | Dephosphorylation of Wee1 by PP2A:B55 | 0.82665 | 0.025 |
|  | kB5525 | Dephosphorylation of Cdc25 by PP2A:B55 | 0.82665 | 0.025 |
|  | fplk1 | Fraction active Plk1 | 0 - 1 | NA |
|  | CycBCdk1T | Total Cdk1 Cyclin B complexes | 8.1808 a.u. | 1 |
|  | CycACdk2T | Total Cdk2 Cyclin A complexes | 2 - 5 a.u. | 2-5 |
|  | PP1T | Total PP1 | 1 a.u. | 1 |
|  | Gwtot | Total Gwl | 1 a.u. | 1 |
|  | ENSAtot | Total Ensa | 1 a.u. | 1 |
|  | B55tot | Total B55 | 0.25 a.u. | 1 |
|  | SubT | Total Cdk1 phosphorylation substrate | 1 a.u. | 1 |