Table S1: Equations of the Model

$$\frac{d[\text{Clb2}]}{dt} = k_{s,b2} - V_{d,b2} \cdot [\text{Clb2}]$$

$$\frac{d[\text{Cdc20}]}{dt} = k_{s,20} - V_{d,20} \cdot [\text{Cdc20}]$$

$$\frac{d[\text{Cdh1}]}{dt} = \frac{V_{a,cdh} \cdot ([\text{Cdh1}]_T - [\text{Cdh1}])}{J_{a,cdh} + ([\text{Cdh1}]_T - [\text{Cdh1}])} - \frac{V_{i,cdh} \cdot [\text{Cdh1}]}{J_{i,cdh} + [\text{Cdh1}]}$$

$$\frac{d[\text{Pds1}]}{dt} = k_{s,pds} - V_{d,pds} \cdot [\text{Pds1}] - l_{as,pds} \cdot [\text{Pds1}] \cdot [\text{Esp1}] + l_{d,pds} \cdot [\text{PE}] + k_{d,esp} \cdot [\text{PE}]$$

$$\frac{d[\text{Esp1}]}{dt} = -l_{as,pds} \cdot [\text{Pds1}] \cdot [\text{Esp1}] + l_{d,pds} \cdot [\text{PE}] + k_{s,esp} - k_{d,esp} \cdot [\text{Esp1}] + V_{d,pds} \cdot [\text{PE}]$$

$$\frac{d[\text{PE}]}{dt} = l_{as,pds} \cdot [\text{Pds1}] \cdot [\text{Esp1}] - l_{d,pds} \cdot [\text{PE}] - V_{d,pds} \cdot [\text{PE}] - k_{d,esp} \cdot [\text{PE}]$$

$$\frac{d[\text{Poloi}]}{dt} = k_{s,polo} - V_{d,polo} \cdot [\text{Poloi}] - \frac{V_{a,polo} \cdot [\text{Poloi}]}{J_{a,polo} + [\text{Poloi}]} + \frac{k_{i,polo} \cdot [\text{Polo}]}{J_{i,polo} + [\text{Polo}]}$$

$$\frac{d[\text{Polo}]}{dt} = \frac{V_{a,polo} \cdot [\text{Poloi}]}{J_{a,polo} + [\text{Poloi}]} - \frac{k_{i,polo} \cdot [\text{Polo}]}{J_{i,polo} + [\text{Polo}]} - V_{d,polo} \cdot [\text{Polo}]$$

$$\frac{d[\text{Tem1a}]}{dt} = -l_{a,men} \cdot [\text{Tem1a}] \cdot [\text{Cdc15a}] + l_{d,men} \cdot [\text{MEN}] + \frac{V_{a,tem} \cdot [\text{Tem1i}]}{J_{tem} + [\text{Tem1i}]} - \frac{V_{i,tem} \cdot [\text{Tem1a}]}{J_{tem} + [\text{Tem1a}] + [\text{MEN}]} + \frac{V_{i,c15} \cdot [\text{MEN}]}{J_{c15} + [\text{Cdc15a}] + [\text{MEN}]}$$

$$\frac{d[\text{Cdc15a}]}{dt} = -l_{a,men} \cdot [\text{Tem1a}] \cdot [\text{Cdc15a}] + l_{d,men} \cdot [\text{MEN}] + \frac{V_{i,tem} \cdot [\text{MEN}]}{J_{tem} + [\text{Tem1a}] + [\text{MEN}]} + \frac{V_{a,c15} \cdot [\text{Cdc15i}]}{J_{c,15} + [\text{Cdc15i}]} - \frac{V_{i,c15} \cdot [\text{Cdc15a}]}{J_{c,15} + [Cdc15a] + [\text{MEN}]}$$

$$\frac{d[\text{MEN}]}{dt} = l_{a,men} \cdot [\text{Tem1a}] \cdot [\text{Cdc15a}] - l_{d,men} \cdot [\text{MEN}] - \frac{V_{i,tem} \cdot [\text{MEN}]}{J_{tem} + [\text{Tem1a}] + [\text{MEN}]} - \frac{V_{i,c15} \cdot [\text{MEN}]}{J_{c,15} + [\text{Cdc15a}] + [\text{MEN}]}$$

$$\frac{d[\text{Cdc14}]}{dt} = -l_{a,1} \cdot [\text{Cdc14}] \cdot [\text{Net1}] + l_{d,1} \cdot [\text{RENT}] - l_{a,2} \cdot [\text{Cdc14}] \cdot [\text{Net1P}] + l_{d,2} \cdot [\text{RENTP}] - l_{a,3} \cdot [\text{Cdc14}] \cdot [\text{PNet1}] + l_{d,3} \cdot [\text{PRENT}]$$
$$- l_{a,4} \cdot [\text{Cdc14}] \cdot [\text{PNet1P}] + l_{d,4} \cdot [\text{PRENTP}]$$

$$\frac{d\left[\text{Net1}\right]}{dt} = -l_{\text{a,1}}\cdot\left[\text{Cdc14}\right]\cdot\left[\text{Net1}\right]+l_{\text{d,1}}\cdot\left[\text{RENT}\right]-\frac{V_{\text{k,12}}\cdot\left[\text{Net1}\right]}{J_{12}+\left[\text{Net1}\right]+\left[\text{RENT}\right]}+\frac{V_{\text{p,21}}\cdot\left[\text{Net1P}\right]}{J_{12}+\left[\text{Net1P}\right]+\left[\text{RENTP}\right]}$$
$$-\frac{V_{\text{k,13}}\cdot\left[\text{Net1}\right]}{J_{13}+\left[\text{Net1}\right]+\left[\text{RENT}\right]}+\frac{V_{\text{p,31}}\cdot\left[\text{PNet1}\right]}{J_{13}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}$$

$$\frac{d\left[\text{PNet1}\right]}{dt} = -l_{\text{a,3}}\cdot\left[\text{Cdc14}\right]\cdot\left[\text{PNet1}\right]+l_{\text{d,3}}\cdot\left[\text{PRENT}\right]-\frac{V_{\text{k,34}}\cdot\left[\text{PNet1}\right]}{J_{34}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}+\frac{V_{\text{p,43}}\cdot\left[\text{PNet1P}\right]}{J_{34}+\left[\text{PNet1P}\right]+\left[\text{PRENTP}\right]}$$
$$+\frac{V_{\text{k,13}}\cdot\left[\text{Net1}\right]}{J_{13}+\left[\text{Net1}\right]+\left[\text{RENT}\right]}-\frac{V_{\text{p,31}}\cdot\left[\text{PNet1}\right]}{J_{13}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}$$

$$\frac{d\left[\text{PNet1P}\right]}{dt} = -l_{\text{a,4}}\cdot\left[\text{Cdc14}\right]\cdot\left[\text{PNet1P}\right]+l_{\text{d,4}}\cdot\left[\text{PRENTP}\right]+\frac{V_{\text{k,34}}\cdot\left[\text{PNet1}\right]}{J_{34}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}$$
$$-\frac{V_{\text{p,43}}\cdot\left[\text{PNet1P}\right]}{J_{34}+\left[\text{PNet1P}\right]+\left[\text{PRENTP}\right]}+\frac{V_{\text{k,24}}\cdot\left[\text{Net1P}\right]}{J_{24}+\left[Net1P\right]+\left[\text{RENTP}\right]}-\frac{V_{\text{p,42}}\cdot\left[\text{PNet1P}\right]}{J_{24}+\left[\text{PNet1P}\right]+\left[\text{PRENTP}\right]}$$

$$\frac{d\left[\text{RENT}\right]}{dt} = l_{\text{a,1}}\cdot\left[\text{Cdc14}\right]\cdot\left[\text{Net1}\right]-l_{\text{d,1}}\cdot\left[\text{RENT}\right]-\frac{V_{\text{k,12}}\cdot\left[\text{RENT}\right]}{J_{12}+\left[\text{Net1}\right]+\left[\text{RENT}\right]}$$
$$+\frac{V_{\text{p,21}}\cdot\left[\text{RENTP}\right]}{J_{12}+\left[\text{Net1P}\right]+\left[\text{RENTP}\right]}-\frac{V_{\text{k,13}}\cdot\left[\text{RENT}\right]}{J_{13}+\left[\text{Net1}\right]+\left[\text{RENT}\right]}+\frac{V_{\text{p,31}}\cdot\left[\text{PRENT}\right]}{J_{13}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}$$

$$\frac{d\left[\text{PRENT}\right]}{dt} = l_{\text{a,3}}\cdot\left[\text{Cdc14}\right]\cdot\left[\text{PNet1}\right]-l_{\text{d,3}}\cdot\left[\text{PRENT}\right]-\frac{V_{\text{k,34}}\cdot\left[\text{PRENT}\right]}{J_{34}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}+\frac{V_{\text{p,43}}\cdot\left[\text{PRENTP}\right]}{J_{34}+\left[\text{PNet1P}\right]+\left[\text{PRENTP}\right]}$$
$$+\frac{V_{\text{k,13}}\cdot\left[\text{RENT}\right]}{J_{13}+\left[\text{Net1}\right]+\left[\text{RENT}\right]}-\frac{V_{\text{p,31}}\cdot\left[\text{PRENT}\right]}{J_{13}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}$$

$$\frac{d\left[\text{PRENTP}\right]}{dt} = l_{\text{a,4}}\cdot\left[\text{Cdc14}\right]\cdot\left[\text{PNet1P}\right]-l_{\text{d,4}}\cdot\left[\text{PRENTP}\right]-\frac{V_{\text{k,34}}\cdot\left[\text{PRENT}\right]}{J_{34}+\left[\text{PNet1}\right]+\left[\text{PRENT}\right]}+\frac{V_{\text{p,43}}\cdot\left[\text{PRENTP}\right]}{J_{34}+\left[\text{PNet1P}\right]+\left[\text{PRENTP}\right]}$$
$$+\frac{V_{\text{k,24}}\cdot\left[\text{RENTP}\right]}{J_{24}+\left[\text{Net1P}\right]+\left[\text{RENTP}\right]}-\frac{V_{\text{p,42}}\cdot\left[\text{PRENTP}\right]}{J_{24}+\left[\text{PNet1P}\right]+\left[\text{PRENTP}\right]}$$

$$[\text{CDK}] = \frac{\left[\text{Clb2}\right]}{1.0+INH}$$

$$[\text{PP2A}] = \frac{1.0+kpp\cdot ki\cdot\left[\text{ACTEsp1}\right]}{1.0+ki\cdot\left[\text{ACTEsp1}\right]}\cdot PP2AT$$

$$S = \exp((-ks)*(t-tm))*(1.0-N)*C*(1.0-SCCRRDD)$$

$$V_{\text{d,b2}} = k_{\text{d,b2}}+k_{\text{d,b2'}}\cdot\left[\text{Cdc20}\right]+k_{\text{d,b2''}}\cdot\left[\text{Cdh1}\right]$$

$$V_{\text{d,20}} = k_{\text{d,20}}+k_{\text{d,20'}}\cdot\left[\text{Cdh1}\right]$$

$$V_{\text{i,cdh}} = k_{\text{k,cdh}}+k_{\text{k,cdh'}}\cdot\left[\text{CDK}\right]$$

$$V_{a,cdh} = k_{p,cdh} + k_{p,cdh'} \cdot [ACTCdc14]$$

$$V_{d,pds} = k_{d,pds} + k_{d,pds'} \cdot \left[Cdc20\right]$$

$$V_{a,polo} = k_{a,polo} + k_{a,polo'} \cdot \left[CDK\right]$$

$$V_{d,polo} = k_{d,polo} + k_{d,polo'} \cdot \left[Cdh1\right]$$

$$V_{a,tem} = k_{a,tem} + k_{a,tem'} \cdot [ACTPOLO] + k_{a,tem''} \cdot S \cdot [ACTPOLO]$$

$$V_{i,tem} = k_{i,tem} + k_{i,tem'} \cdot [ACTPP2A] + k_{i,tem''} \cdot [ACTCdc14]$$

$$V_{a,c15} = k_{a,c15} + k_{a,c15'} \cdot [ACTCdc14]$$

$$V_{i,c15} = k_{i,c15} + k_{i,c15'} \cdot [CDK]$$

$$V_{k,12} = k_{k,12} \cdot [CDK]$$

$$V_{p,21} = k_{p,21} \cdot [ACTPP2A] + k_{p,21'} \cdot [ACTCdc14]$$

$$V_{k,34} = k_{k,34} \cdot [CDK]$$

$$V_{p,43} = k_{p,43} \cdot [ACTPP2A] + k_{p,43'} \cdot [ACTCdc14]$$

$$V_{k,13} = k_{k,13} \cdot effc15 \cdot [CDC15a] + k_{k,13'} \cdot [ACTPOLO] + k_{k,13''} \cdot [ACTMEN]$$

$$V_{p,31} = k_{p,31} \cdot [ACTPP2A] + k_{p,31'} \cdot [ACTCdc14]$$

$$V_{k,24} = k_{k,24} \cdot [ACTPOLO] + k_{k,24'} \cdot [ACTMEN]$$

$$V_{p,42} = k_{p,42} \cdot [ACTPP2A] + k_{p,42'} \cdot [ACTCdc14]$$

$$[PDS1T] = [PDS1] + [PE]$$

$$[Esp1T] = [Esp1] + [PE]$$

$$[ACTCdc14] = effc14 \cdot [Cdc14]$$

$$ACTMEN = effc15 \cdot [MEN]$$

$$[ACTPOLO] = effpol \cdot [POLO]$$

$$[ACTEsp1] = effesp \cdot [Esp1]$$

$$[\text{ACTPP2A}] = \textit{effppa} \cdot [\text{PP2A}]$$