Supplementary Table 2. Differential equations and constraints

differential equations

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d[CyclinD]/dt = -kd_CyclinD * [CyclinD] + ks_CyclinD - kb_CyclinD__Cdk4
* [Cdk4[00]] * [CyclinD] - kb_CyclinD__Cdk4 * [Cdk4[10]] * [CyclinD] +
ku_CyclinD__Cdk4 * [Cdk4[01]] + ku_CyclinD__Cdk4 * [Cdk4[11]]

d[Cdk4[00]]/dt = -kb_p27__Cdk4 * [Cdk4[00]] * [p27] + ku_p27__Cdk4 *
[Cdk4[10]] - kb_CyclinD__Cdk4 * [Cdk4[00]] * [CyclinD] +
ku_CyclinD__Cdk4 * [Cdk4[01]] + kd_CyclinD * [Cdk4[01]] + kd_p27 *
[Cdk4[10]]

d[Cdk4[10]]/dt = kb_p27__Cdk4 * [Cdk4[00]] * [p27] - ku_p27__Cdk4 *
[Cdk4[10]] - kb_CyclinD__Cdk4 * [Cdk4[10]] * [CyclinD] +
ku_CyclinD__Cdk4 * [Cdk4[11]] + kd_CyclinD * [Cdk4[11]] - kd_p27 *
[Cdk4[10]]

d[Cdk4[01]]/dt = -kb_p27__Cdk4 * [Cdk4[01]] * [p27] + ku_p27__Cdk4 *
[Cdk4[11]] + kb_CyclinD__Cdk4 * [Cdk4[00]] * [CyclinD] -
ku_CyclinD__Cdk4 * [Cdk4[01]] - kd_CyclinD * [Cdk4[01]] + kd_p27 *
[Cdk4[11]] - kb_D4__pRb * [pRb[00]] * [Cdk4[01]] + ku_D4__pRb *
[Cdk4[01]_pRb[00]_pRb[10]_Int] + kup_D4__pRb *
[Cdk4[01]_pRb[00]_pRb[10]_Int] - kb_D4__pRb * [pRb[01]] * [Cdk4[01]] +
ku_D4__pRb * [Cdk4[01]_pRb[01]_pRb[11]_Int] + kup_D4__pRb *
[Cdk4[01]_pRb[01]_pRb[11]_Int]

d[Cdk4[11]]/dt = kb_p27__Cdk4 * [Cdk4[01]] * [p27] - ku_p27__Cdk4 *
[Cdk4[11]] + kb_CyclinD__Cdk4 * [Cdk4[10]] * [CyclinD] -
ku_CyclinD__Cdk4 * [Cdk4[11]] - kd_CyclinD * [Cdk4[11]] - kd_p27 *
[Cdk4[11]]

d[p27]/dt = ks_p27 - kd_p27 * [p27] - kb_p27__Cdk4 * [Cdk4[00]] * [p27]
- kb_p27__Cdk4 * [Cdk4[01]] * [p27] + ku_p27__Cdk4 * [Cdk4[10]] +
ku_p27__Cdk4 * [Cdk4[11]] - kb_p27__Cdk2 * [Cdk2[000]] * [p27] -
kb_p27__Cdk2 * [Cdk2[010]] * [p27] - kb_p27__Cdk2 * [Cdk2[001]] * [p27]
- kb_p27__Cdk2 * [Cdk2[011]] * [p27] - kb_p27__Cdk2 * [Cdk2[002]] *
[p27] - kb_p27__Cdk2 * [Cdk2[012]] * [p27] + ku_p27__Cdk2 * [Cdk2[100]]
+ ku_p27__Cdk2 * [Cdk2[110]] + ku_p27__Cdk2 * [Cdk2[101]] +
ku_p27__Cdk2 * [Cdk2[111]] + ku_p27__Cdk2 * [Cdk2[102]] + ku_p27__Cdk2
* [Cdk2[112]]

d[CyclinA]/dt = ks_CyclinA - kd_CyclinA * [CyclinA] - kb_APCC__CyclinA
* [CyclinA] * [APC/C] + ku_APCC__CyclinA * [APC/C_CyclinA_Int] -
kb_CyclinA__Cdk1 * [Cdk1[00]] * [CyclinA] - kb_CyclinA__Cdk1 *
[Cdk1[10]] * [CyclinA] - kb_CyclinA__Cdk2 * [Cdk2[000]] * [CyclinA] -
kb_CyclinA__Cdk2 * [Cdk2[100]] * [CyclinA] - kb_CyclinA__Cdk2 *
[Cdk2[010]] * [CyclinA] - kb_CyclinA__Cdk2 * [Cdk2[110]] * [CyclinA] +
ku_CyclinA__Cdk2 * [Cdk2[002]] + ku_CyclinA__Cdk2 * [Cdk2[102]] +
ku_CyclinA__Cdk2 * [Cdk2[012]] + ku_CyclinA__Cdk2 * [Cdk2[112]] +
ku_CyclinA__Cdk1 * [Cdk1[01]] + ku_CyclinA__Cdk1 * [Cdk1[11]]

d[CyclinE]/dt = ks_CyclinE - kd_CyclinE * [CyclinE] - kb_CyclinE__Cdk2
* [Cdk2[000]] * [CyclinE] - kb_CyclinE__Cdk2 * [Cdk2[100]] * [CyclinE]
- kb_CyclinE__Cdk2 * [Cdk2[010]] * [CyclinE] - kb_CyclinE__Cdk2 *
[Cdk2[110]] * [CyclinE] + ku_CyclinE__Cdk2 * [Cdk2[001]] +
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ku_CyclinE__Cdk2 * [Cdk2[101]] + ku_CyclinE__Cdk2 * [Cdk2[011]] +
ku_CyclinE__Cdk2 * [Cdk2[111]]

d[Cdk2[000]]/dt = -kb_p27__Cdk2 * [Cdk2[000]] * [p27] + ku_p27__Cdk2 *
[Cdk2[100]] - kb_CyclinE__Cdk2 * [Cdk2[000]] * [CyclinE] +
ku_CyclinE__Cdk2 * [Cdk2[001]] - kb_CyclinA__Cdk2 * [Cdk2[000]] *
[CyclinA] + ku_CyclinA__Cdk2 * [Cdk2[002]] - k_act * [Cdk2[000]] +
kd_p27 * [Cdk2[100]] + kd_CyclinE * [Cdk2[001]] + kd_CyclinA *
[Cdk2[002]] + kud_APCC__CyclinA * [APC/C_Cdk2[000]_Cdk2[002]_Int]

d[Cdk2[100]]/dt = kb_p27__Cdk2 * [Cdk2[000]] * [p27] - ku_p27__Cdk2 *
[Cdk2[100]] - kb_CyclinE__Cdk2 * [Cdk2[100]] * [CyclinE] +
ku_CyclinE__Cdk2 * [Cdk2[101]] - kb_CyclinA__Cdk2 * [Cdk2[100]] *
[CyclinA] + ku_CyclinA__Cdk2 * [Cdk2[102]] - k_act * [Cdk2[100]] -
kd_p27 * [Cdk2[100]] + kd_CyclinE * [Cdk2[101]] + kd_CyclinA *
[Cdk2[102]] + kud_APCC__CyclinA * [APC/C_Cdk2[100]_Cdk2[102]_Int]

d[Cdk2[010]]/dt = -kb_p27__Cdk2 * [Cdk2[010]] * [p27] + ku_p27__Cdk2 *
[Cdk2[110]] - kb_CyclinE__Cdk2 * [Cdk2[010]] * [CyclinE] +
ku_CyclinE__Cdk2 * [Cdk2[011]] - kb_CyclinA__Cdk2 * [Cdk2[010]] *
[CyclinA] + ku_CyclinA__Cdk2 * [Cdk2[012]] + k_act * [Cdk2[000]] +
kd_p27 * [Cdk2[110]] + kd_CyclinE * [Cdk2[011]] + kd_CyclinA *
[Cdk2[012]] + kud_APCC__CyclinA * [APC/C_Cdk2[010]_Cdk2[012]_Int]

d[Cdk2[110]]/dt = kb_p27__Cdk2 * [Cdk2[010]] * [p27] - ku_p27__Cdk2 *
[Cdk2[110]] - kb_CyclinE__Cdk2 * [Cdk2[110]] * [CyclinE] +
ku_CyclinE__Cdk2 * [Cdk2[111]] - kb_CyclinA__Cdk2 * [Cdk2[110]] *
[CyclinA] + ku_CyclinA__Cdk2 * [Cdk2[112]] + k_act * [Cdk2[100]] -
kd_p27 * [Cdk2[110]] + kd_CyclinE * [Cdk2[111]] + kd_CyclinA *
[Cdk2[112]] + kud_APCC__CyclinA * [APC/C_Cdk2[110]_Cdk2[112]_Int]

d[Cdk2[001]]/dt = -kb_p27__Cdk2 * [Cdk2[001]] * [p27] + ku_p27__Cdk2 *
[Cdk2[101]] + kb_CyclinE__Cdk2 * [Cdk2[000]] * [CyclinE] -
ku_CyclinE__Cdk2 * [Cdk2[001]] - k_act * [Cdk2[001]] + kd_p27 *
[Cdk2[101]] - kd_CyclinE * [Cdk2[001]]

d[Cdk2[101]]/dt = kb_p27__Cdk2 * [Cdk2[001]] * [p27] - ku_p27__Cdk2 *
[Cdk2[101]] + kb_CyclinE__Cdk2 * [Cdk2[100]] * [CyclinE] -
ku_CyclinE__Cdk2 * [Cdk2[101]] - k_act * [Cdk2[101]] - kd_p27 *
[Cdk2[101]] - kd_CyclinE * [Cdk2[101]]

d[Cdk2[011]]/dt = -kb_p27__Cdk2 * [Cdk2[011]] * [p27] + ku_p27__Cdk2 *
[Cdk2[111]] + kb_CyclinE__Cdk2 * [Cdk2[010]] * [CyclinE] -
ku_CyclinE__Cdk2 * [Cdk2[011]] + k_act * [Cdk2[001]] + kd1_p27 *
[Cdk2[111]] - kd_CyclinE * [Cdk2[011]] - kb_E2__pRb * [pRb[10]] *
[Cdk2[011]] + ku_E2__pRb * [Cdk2[011]_pRb[10]_pRb[20]_Int] +
kup_E2__pRb * [Cdk2[011]_pRb[10]_pRb[20]_Int] - kb_E2__pRb * [pRb[11]]
* [Cdk2[011]] + ku_E2__pRb * [Cdk2[011]_pRb[11]_pRb[21]_Int] +
kup_E2__pRb * [Cdk2[011]_pRb[11]_pRb[21]_Int]

d[Cdk2[111]]/dt = kb_p27__Cdk2 * [Cdk2[011]] * [p27] - ku_p27__Cdk2 *
[Cdk2[111]] + kb_CyclinE__Cdk2 * [Cdk2[110]] * [CyclinE] -
ku_CyclinE__Cdk2 * [Cdk2[111]] + k_act * [Cdk2[101]] - kd1_p27 *
[Cdk2[111]] - kd_CyclinE * [Cdk2[111]]

d[Cdk2[002]]/dt = -kb_p27__Cdk2 * [Cdk2[002]] * [p27] + ku_p27__Cdk2 *
[Cdk2[102]] + kb_CyclinA__Cdk2 * [Cdk2[000]] * [CyclinA] -
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ku_CyclinA__Cdk2 * [Cdk2[002]] - k_act * [Cdk2[002]] + kd_p27 *
[Cdk2[102]] - kd_CyclinA * [Cdk2[002]] - kb_APCC__CyclinA * [Cdk2[002]]
* [APC/C] + ku_APCC__CyclinA * [APC/C_Cdk2[000]_Cdk2[002]_Int]

d[Cdk2[102]]/dt = kb_p27__Cdk2 * [Cdk2[002]] * [p27] - ku_p27__Cdk2 *
[Cdk2[102]] + kb_CyclinA__Cdk2 * [Cdk2[100]] * [CyclinA] -
ku_CyclinA__Cdk2 * [Cdk2[102]] - k_act * [Cdk2[102]] - kd_p27 *
[Cdk2[102]] - kd_CyclinA * [Cdk2[102]] - kb_APCC__CyclinA * [Cdk2[102]]
* [APC/C] + ku_APCC__CyclinA * [APC/C_Cdk2[100]_Cdk2[102]_Int]

d[Cdk2[012]]/dt = -kb_p27__Cdk2 * [Cdk2[012]] * [p27] + ku_p27__Cdk2 *
[Cdk2[112]] + kb_CyclinA__Cdk2 * [Cdk2[010]] * [CyclinA] -
ku_CyclinA__Cdk2 * [Cdk2[012]] + k_act * [Cdk2[002]] + kd_p27 *
[Cdk2[112]] - kd_CyclinA * [Cdk2[012]] - kb_APCC__CyclinA * [Cdk2[012]]
* [APC/C] + ku_APCC__CyclinA * [APC/C_Cdk2[010]_Cdk2[012]_Int] -
kb_A2__pRb * [pRb[10]] * [Cdk2[012]] + ku_A2__pRb *
[Cdk2[012]_pRb[10]_pRb[20]_Int] + kup_A2__pRb *
[Cdk2[012]_pRb[10]_pRb[20]_Int] - kb_A2__pRb * [pRb[11]] * [Cdk2[012]]
+ ku_A2__pRb * [Cdk2[012]_pRb[11]_pRb[21]_Int] + kup_A2__pRb *
[Cdk2[012]_pRb[11]_pRb[21]_Int]

d[Cdk2[112]]/dt = kb_p27__Cdk2 * [Cdk2[012]] * [p27] - ku_p27__Cdk2 *
[Cdk2[112]] + kb_CyclinA__Cdk2 * [Cdk2[110]] * [CyclinA] -
ku_CyclinA__Cdk2 * [Cdk2[112]] + k_act * [Cdk2[102]] - kd_p27 *
[Cdk2[112]] - kd_CyclinA * [Cdk2[112]] - kb_APCC__CyclinA * [Cdk2[112]]
* [APC/C] + ku_APCC__CyclinA * [APC/C_Cdk2[110]_Cdk2[112]_Int]

d[Cdk1[00]]/dt = -kb_CyclinA__Cdk1 * [Cdk1[00]] * [CyclinA] +
ku_CyclinA__Cdk1 * [Cdk1[01]] - k_act * [Cdk1[00]] + kd_CyclinA *
[Cdk1[01]] + kud_APCC__CyclinA * [APC/C_Cdk1[00]_Cdk1[01]_Int]

d[Cdk1[10]]/dt = -kb_CyclinA__Cdk1 * [Cdk1[10]] * [CyclinA] +
ku_CyclinA__Cdk1 * [Cdk1[11]] + k_act * [Cdk1[00]] + kd_CyclinA *
[Cdk1[11]] + kud_APCC__CyclinA * [APC/C_Cdk1[10]_Cdk1[11]_Int]

d[Cdk1[01]]/dt = kb_CyclinA__Cdk1 * [Cdk1[00]] * [CyclinA] -
ku_CyclinA__Cdk1 * [Cdk1[01]] - k_act * [Cdk1[01]] - kd_CyclinA *
[Cdk1[01]] - kb_APCC__CyclinA * [Cdk1[01]] * [APC/C] + ku_APCC__CyclinA
* [APC/C_Cdk1[00]_Cdk1[01]_Int]

d[Cdk1[11]]/dt = kb_CyclinA__Cdk1 * [Cdk1[10]] * [CyclinA] -
ku_CyclinA__Cdk1 * [Cdk1[11]] + k_act * [Cdk1[01]] - kd_CyclinA *
[Cdk1[11]] - kb_APCC__CyclinA * [Cdk1[11]] * [APC/C] + ku_APCC__CyclinA
* [APC/C_Cdk1[10]_Cdk1[11]_Int] - kb_A1__pRb * [pRb[10]] * [Cdk1[11]] +
ku_A1__pRb * [Cdk1[11]_pRb[10]_pRb[20]_Int] + kup_A1__pRb *
[Cdk1[11]_pRb[10]_pRb[20]_Int] - kb_A1__pRb * [pRb[11]] * [Cdk1[11]] +
ku_A1__pRb * [Cdk1[11]_pRb[11]_pRb[21]_Int] + kup_A1__pRb *
[Cdk1[11]_pRb[11]_pRb[21]_Int]

d[Cdk4[01]_pRb[00]_pRb[10]_Int]/dt = kb_D4__pRb * [pRb[00]] *
[Cdk4[01]] - ku_D4__pRb * [Cdk4[01]_pRb[00]_pRb[10]_Int] - kup_D4__pRb
* [Cdk4[01]_pRb[00]_pRb[10]_Int]

d[Cdk4[01]_pRb[01]_pRb[11]_Int]/dt = kb_D4__pRb * [pRb[01]] *
[Cdk4[01]] - ku_D4__pRb * [Cdk4[01]_pRb[01]_pRb[11]_Int] - kup_D4__pRb
* [Cdk4[01]_pRb[01]_pRb[11]_Int]
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d[Cdk2[011]_pRb[10]_pRb[20]_Int]/dt = kb_E2__pRb * [pRb[10]] *
[Cdk2[011]] - ku_E2__pRb * [Cdk2[011]_pRb[10]_pRb[20]_Int] -
kup_E2__pRb * [Cdk2[011]_pRb[10]_pRb[20]_Int]

d[Cdk2[011]_pRb[11]_pRb[21]_Int]/dt = kb_E2__pRb * [pRb[11]] *
[Cdk2[011]] - ku_E2__pRb * [Cdk2[011]_pRb[11]_pRb[21]_Int] -
kup_E2__pRb * [Cdk2[011]_pRb[11]_pRb[21]_Int]

d[Cdk2[012]_pRb[10]_pRb[20]_Int]/dt = kb_A2__pRb * [pRb[10]] *
[Cdk2[012]] - ku_A2__pRb * [Cdk2[012]_pRb[10]_pRb[20]_Int] -
kup_A2__pRb * [Cdk2[012]_pRb[10]_pRb[20]_Int]

d[Cdk2[012]_pRb[11]_pRb[21]_Int]/dt = kb_A2__pRb * [pRb[11]] *
[Cdk2[012]] - ku_A2__pRb * [Cdk2[012]_pRb[11]_pRb[21]_Int] -
kup_A2__pRb * [Cdk2[012]_pRb[11]_pRb[21]_Int]

d[Cdk1[11]_pRb[10]_pRb[20]_Int]/dt = kb_A1__pRb * [pRb[10]] *
[Cdk1[11]] - ku_A1__pRb * [Cdk1[11]_pRb[10]_pRb[20]_Int] - kup_A1__pRb
* [Cdk1[11]_pRb[10]_pRb[20]_Int]

d[Cdk1[11]_pRb[11]_pRb[21]_Int]/dt = kb_A1__pRb * [pRb[11]] *
[Cdk1[11]] - ku_A1__pRb * [Cdk1[11]_pRb[11]_pRb[21]_Int] - kup_A1__pRb
* [Cdk1[11]_pRb[11]_pRb[21]_Int]

d[pRb[00]]/dt = -kb_E2F__pRb * [pRb[00]] * [E2F] + ku_E2F__pRb *
[pRb[01]] - kb_D4__pRb * [pRb[00]] * [Cdk4[01]] + ku_D4__pRb *
[Cdk4[01]_pRb[00]_pRb[10]_Int] + kt_pRb__Dephos * [pRb[20]] + kd_E2F *
[pRb[01]]

d[pRb[10]]/dt = -kb_E2F__pRb * [pRb[10]] * [E2F] + ku_E2F__pRb *
[pRb[11]] + kup_D4__pRb * [Cdk4[01]_pRb[00]_pRb[10]_Int] - kb_E2__pRb *
[pRb[10]] * [Cdk2[011]] + ku_E2__pRb * [Cdk2[011]_pRb[10]_pRb[20]_Int]
+ kd_E2F * [pRb[11]] - kb_A2__pRb * [pRb[10]] * [Cdk2[012]] +
ku_A2__pRb * [Cdk2[012]_pRb[10]_pRb[20]_Int] - kb_A1__pRb * [pRb[10]] *
[Cdk1[11]] + ku_A1__pRb * [Cdk1[11]_pRb[10]_pRb[20]_Int]

d[pRb[20]]/dt = ku_E2F__pRb * [pRb[21]] + kup_E2__pRb *
[Cdk2[011]_pRb[10]_pRb[20]_Int] - kt_pRb__Dephos * [pRb[20]] + kd_E2F *
[pRb[21]] + kup_A2__pRb * [Cdk2[012]_pRb[10]_pRb[20]_Int] + kup_A1__pRb
* [Cdk1[11]_pRb[10]_pRb[20]_Int]

d[pRb[01]]/dt = kb_E2F__pRb * [pRb[00]] * [E2F] - ku_E2F__pRb *
[pRb[01]] - kb_D4__pRb * [pRb[01]] * [Cdk4[01]] + ku_D4__pRb *
[Cdk4[01]_pRb[01]_pRb[11]_Int] + kt_pRb__Dephos * [pRb[21]] - kd_E2F *
[pRb[01]]

d[pRb[11]]/dt = kb_E2F__pRb * [pRb[10]] * [E2F] - ku_E2F__pRb *
[pRb[11]] + kup_D4__pRb * [Cdk4[01]_pRb[01]_pRb[11]_Int] - kb_E2__pRb *
[pRb[11]] * [Cdk2[011]] + ku_E2__pRb * [Cdk2[011]_pRb[11]_pRb[21]_Int]
- kd_E2F * [pRb[11]] - kb_A2__pRb * [pRb[11]] * [Cdk2[012]] +
ku_A2__pRb * [Cdk2[012]_pRb[11]_pRb[21]_Int] - kb_A1__pRb * [pRb[11]] *
[Cdk1[11]] + ku_A1__pRb * [Cdk1[11]_pRb[11]_pRb[21]_Int]

d[pRb[21]]/dt = -ku_E2F__pRb * [pRb[21]] + kup_E2__pRb *
[Cdk2[011]_pRb[11]_pRb[21]_Int] - kt_pRb__Dephos * [pRb[21]] - kd_E2F *
[pRb[21]] + kup_A2__pRb * [Cdk2[012]_pRb[11]_pRb[21]_Int] + kup_A1__pRb
* [Cdk1[11]_pRb[11]_pRb[21]_Int]
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d[E2F]/dt = ks_E2F - kd0_E2F * [E2F] - kb_E2F__pRb * [pRb[00]] * [E2F]
- kb_E2F__pRb * [pRb[10]] * [E2F] + ku_E2F__pRb * [pRb[01]] +
ku_E2F__pRb * [pRb[11]] + ku_E2F__pRb * [pRb[21]]

d[Emi1]/dt = -kb_Emi__APCC * [APC/C] * [Emi1] + ku_Emi__APCC *
[APC/C:Emi1] - kd_Emi1 * [Emi1] + ks_Emi1

d[APC/C]/dt = -kb_Emi__APCC * [APC/C] * [Emi1] + ku_Emi__APCC *
[APC/C:Emi1] + kd_Emi1 * [APC/C:Emi1] - kb_APCC__CyclinA * [CyclinA] *
[APC/C] + ku_APCC__CyclinA * [APC/C_CyclinA_Int] + kud_APCC__CyclinA *
[APC/C_CyclinA_Int] - kb_APCC__CyclinA * [Cdk2[002]] * [APC/C] +
ku_APCC__CyclinA * [APC/C_Cdk2[000]_Cdk2[002]_Int] + kud_APCC__CyclinA
* [APC/C_Cdk2[000]_Cdk2[002]_Int] - kb_APCC__CyclinA * [Cdk2[102]] *
[APC/C] + ku_APCC__CyclinA * [APC/C_Cdk2[100]_Cdk2[102]_Int] +
kud_APCC__CyclinA * [APC/C_Cdk2[100]_Cdk2[102]_Int] - kb_APCC__CyclinA
* [Cdk2[012]] * [APC/C] + ku_APCC__CyclinA *
[APC/C_Cdk2[010]_Cdk2[012]_Int] + kud_APCC__CyclinA *
[APC/C_Cdk2[010]_Cdk2[012]_Int] - kb_APCC__CyclinA * [Cdk2[112]] *
[APC/C] + ku_APCC__CyclinA * [APC/C_Cdk2[110]_Cdk2[112]_Int] +
kud_APCC__CyclinA * [APC/C_Cdk2[110]_Cdk2[112]_Int] - kb_APCC__CyclinA
* [Cdk1[01]] * [APC/C] + ku_APCC__CyclinA *
[APC/C_Cdk1[00]_Cdk1[01]_Int] + kud_APCC__CyclinA *
[APC/C_Cdk1[00]_Cdk1[01]_Int] - kb_APCC__CyclinA * [Cdk1[11]] * [APC/C]
+ ku_APCC__CyclinA * [APC/C_Cdk1[10]_Cdk1[11]_Int] + kud_APCC__CyclinA
* [APC/C_Cdk1[10]_Cdk1[11]_Int]

d[APC/C:Emi1]/dt = kb_Emi__APCC * [APC/C] * [Emi1] - ku_Emi__APCC *
[APC/C:Emi1] - kd_Emi1 * [APC/C:Emi1]

d[APC/C_CyclinA_Int]/dt = kb_APCC__CyclinA * [CyclinA] * [APC/C] -
ku_APCC__CyclinA * [APC/C_CyclinA_Int] - kud_APCC__CyclinA *
[APC/C_CyclinA_Int]

d[APC/C_Cdk2[000]_Cdk2[002]_Int]/dt = kb_APCC__CyclinA * [Cdk2[002]] *
[APC/C] - ku_APCC__CyclinA * [APC/C_Cdk2[000]_Cdk2[002]_Int] -
kud_APCC__CyclinA * [APC/C_Cdk2[000]_Cdk2[002]_Int]

d[APC/C_Cdk2[100]_Cdk2[102]_Int]/dt = kb_APCC__CyclinA * [Cdk2[102]] *
[APC/C] - ku_APCC__CyclinA * [APC/C_Cdk2[100]_Cdk2[102]_Int] -
kud_APCC__CyclinA * [APC/C_Cdk2[100]_Cdk2[102]_Int]

d[APC/C_Cdk2[010]_Cdk2[012]_Int]/dt = kb_APCC__CyclinA * [Cdk2[012]] *
[APC/C] - ku_APCC__CyclinA * [APC/C_Cdk2[010]_Cdk2[012]_Int] -
kud_APCC__CyclinA * [APC/C_Cdk2[010]_Cdk2[012]_Int]

d[APC/C_Cdk2[110]_Cdk2[112]_Int]/dt = kb_APCC__CyclinA * [Cdk2[112]] *
[APC/C] - ku_APCC__CyclinA * [APC/C_Cdk2[110]_Cdk2[112]_Int] -
kud_APCC__CyclinA * [APC/C_Cdk2[110]_Cdk2[112]_Int]

d[APC/C_Cdk1[00]_Cdk1[01]_Int]/dt = kb_APCC__CyclinA * [Cdk1[01]] *
[APC/C] - ku_APCC__CyclinA * [APC/C_Cdk1[00]_Cdk1[01]_Int] -
kud_APCC__CyclinA * [APC/C_Cdk1[00]_Cdk1[01]_Int]

d[APC/C_Cdk1[10]_Cdk1[11]_Int]/dt = kb_APCC__CyclinA * [Cdk1[11]] *
[APC/C] - ku_APCC__CyclinA * [APC/C_Cdk1[10]_Cdk1[11]_Int] -
kud_APCC__CyclinA * [APC/C_Cdk1[10]_Cdk1[11]_Int]
```

constraints

Cdk4[00] + Cdk4[01] + Cdk4[10] + Cdk4[11] +
Cdk4[10]_pRb[00]_pRb[01]_Int + Cdk4[01]_pRb[10]_pRb[11]_Int = constant

Cdk2[000] + Cdk2[001] + Cdk2[002] + Cdk2[010] + Cdk2[011] + Cdk2[012] +
Cdk2[100] + Cdk2[101] + Cdk2[102] + Cdk2[110] + Cdk2[111] + Cdk2[112] +
Cdk2[011]_pRb[10]_pRb[20]_Int + Cdk2[011]_pRb[11]_pRb[21]_Int +
Cdk2[012]_pRb[10]_pRb[20]_Int + Cdk2[012]_pRb[11]_pRb[21]_Int =
constant

Cdk1[00] + Cdk1[01] + Cdk1[10] + Cdk1[11] +
Cdk1[11]_pRb[10]_pRb[20]_Int + Cdk1[11]_pRb[11]_pRb[21]_Int = constant

pRb[00] + pRb[01] + pRb[10] + pRb[11] + pRb[20] + pRb[21] = constant

APC/C + APC/C:Emi1 + APC/C_CyclinA_Int + APC/C_Cdk2[000]_Cdk2[002]_Int
+ APC/C_Cdk2[100]_Cdk2[102]_Int + APC/C_Cdk2[010]_Cdk2[012]_Int +
APC/C_Cdk2[110]_Cdk2[112]_Int + APC/C_Cdk1[00]_Cdk1[01]_Int +
APC/C_Cdk1[10]_Cdk1[11]_Int = constant