

# R15-24

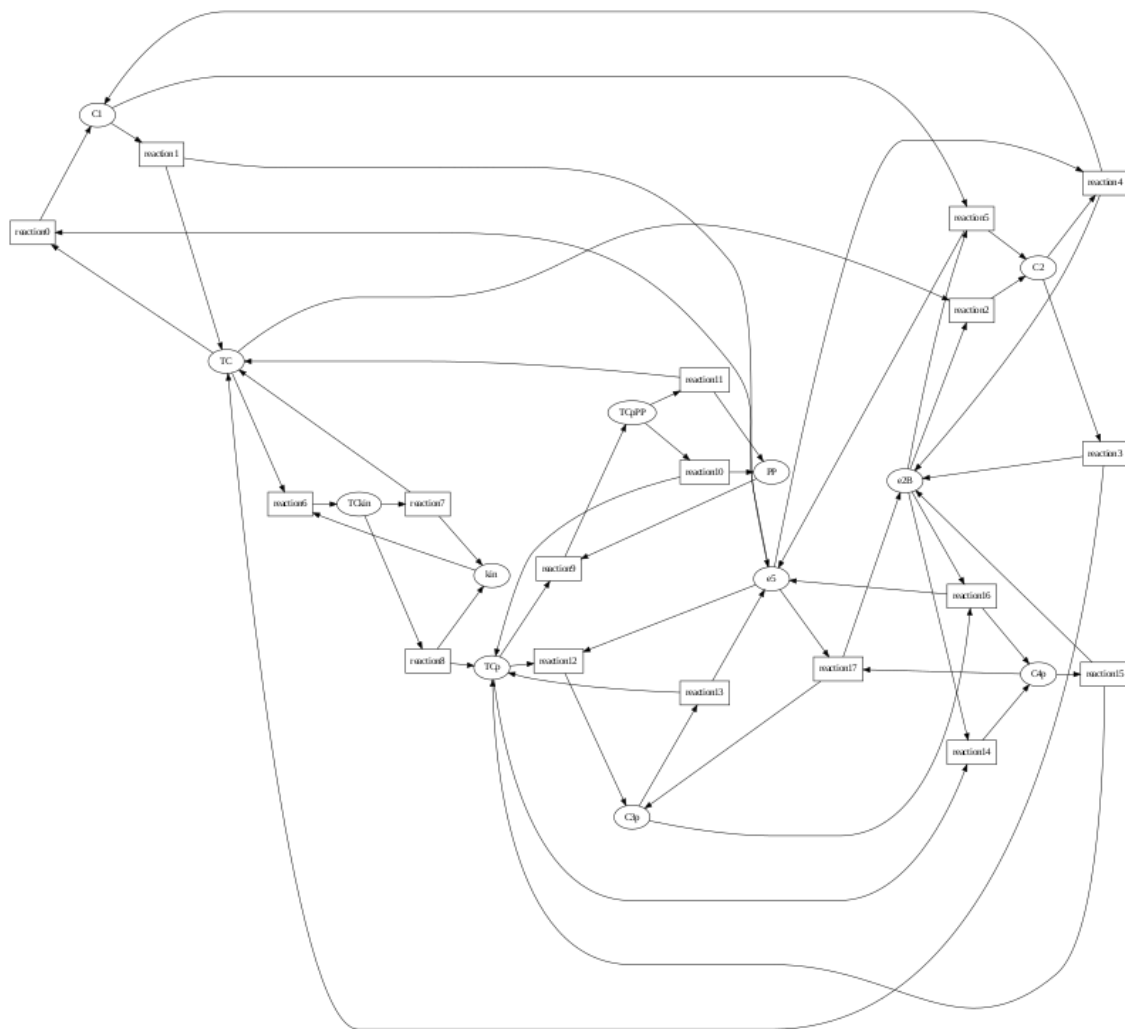
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```
[1]: TC+e5<=>C1.  
TC + e2B<=> C2.  
C2 + e5<=>C1 + e2B.  
TC + kin<=>TCkin.  
TCkin => TCp + kin.  
TCp + PP<=>TCpPP.  
TCpPP =>TC + PP.  
TCp + e5<=>C3p.  
TCp + e2B<=>C4p.  
C3p + e2B<=>C4p + e5.
```

[1]:

```
[2]: draw_reactions.
```



[2]:

[3]: `list_ode.`

$$\begin{aligned}
e2B_0 &= 0 \\
C3p_0 &= 0 \\
e5_0 &= 0 \\
C4p_0 &= 0 \\
TCp_0 &= 0 \\
TC_0 &= 0 \\
PP_0 &= 0 \\
TCpPP_0 &= 0 \\
kin_0 &= 0 \\
TCkin_0 &= 0 \\
C2_0 &= 0 \\
C1_0 &= 0 \\
\frac{de2B}{dt} &= C2 + C4p - C1 * e2B + C2 * e5 - C3p * e2B + C4p * e5 - TC * e2B - TCp * e2B \\
\frac{dC3p}{dt} &= C4p * e5 - C3p - C3p * e2B + TCp * e5 \\
\frac{de5}{dt} &= C1 + C3p + C1 * e2B - C2 * e5 + C3p * e2B - C4p * e5 - TC * e5 - TCp * e5 \\
\frac{dC4p}{dt} &= C3p * e2B - C4p - C4p * e5 + TCp * e2B \\
\frac{dTCp}{dt} &= C3p + C4p + TCkin + TCpPP - PP * TCp - TCp * e2B - TCp * e5 \\
\frac{dTC}{dt} &= C1 + C2 + TCkin + TCpPP - TC * e2B - TC * e5 - TC * kin \\
\frac{dPP}{dt} &= 2 * TCpPP - PP * TCp \\
\frac{dTCpPP}{dt} &= PP * TCp - 2 * TCpPP \\
\frac{dkin}{dt} &= 2 * TCkin - TC * kin \\
\frac{dTCkin}{dt} &= TC * kin - 2 * TCkin \\
\frac{dC2}{dt} &= C1 * e2B - C2 - C2 * e5 + TC * e2B \\
\frac{dC1}{dt} &= C2 * e5 - C1 - C1 * e2B + TC * e5
\end{aligned}$$

[3] :

[ ] :