Corrected Kinetic Laws

$$r_{1,j} = \frac{V_{max,r1,j} \cdot \dfrac{[S_{ex}]}{k_{r1,j,Sex}} \cdot \left(1 - \dfrac{\frac{[S_j]}{[S_{ex}]}}{k_{r1,j,EQ}}\right)}{1 + \dfrac{[S_{ex}]}{k_{r1,j,Sex}} + \dfrac{[S_j]}{k_{r1,j,Sj}}}$$

$$r_{6,j} = \frac{V_{max,r6,j} \cdot \dfrac{[P_j]}{k_{r6,j,Pj}} \cdot \left(1 - \dfrac{\frac{[P_{ex}]}{[P_j]}}{k_{r6,j,EQ}}\right)}{1 + \dfrac{[P_{ex}]}{k_{r6,j,Pex}} + \dfrac{[P_j]}{k_{r6,j,Pj}}}$$

$$r_{TA1} = \frac{V_{max,TAj} \cdot \dfrac{[A_j]}{k_{TAj,Aj}} \cdot \left(1 - \dfrac{\frac{[A_{ex}]}{[A_j]}}{k_{TAj,EQ}}\right)}{1 + \dfrac{[A_j]}{k_{TAj,Aj}} + \dfrac{[A_{ex}]}{k_{TAj,Aex}}}$$

$$r_{TB1} = \frac{V_{max,TBj} \cdot \dfrac{[B_j]}{k_{TBj,Bj}} \left(1 - \dfrac{\frac{[B_{ex}]}{[B_j]}}{k_{TBj,EQ}}\right)}{1 + \dfrac{[B_j]}{k_{TBj,Bj}} + \dfrac{[B_{ex}]}{k_{TBj,Bex}}}$$

$$r_{TC1} = \frac{V_{max,TCj} \cdot \dfrac{[C_j]}{k_{TCj,Cj}} \left(1 - \dfrac{\frac{[C_{ex}]}{[C_j]}}{k_{TCj,EQ}}\right)}{1 + \dfrac{[C_j]}{k_{TCj,Cj}} + \dfrac{[C_{ex}]}{k_{TCj,Cex}}}$$

$$r_{TZ1} = \frac{V_{max,TZj} \cdot \dfrac{[Z_j]}{k_{TZj,Zj}} \left(1 - \dfrac{\frac{[Z_{ex}]}{[Z_j]}}{k_{TZj,EQ}}\right)}{1 + \dfrac{[Z_j]}{k_{TZj,Zj}} + \dfrac{[Z_{ex}]}{k_{TZj,Zex}}}$$