```
begin model
################################################################################
#
begin parameters
# molecules
LCK_T   19.703
CD3z_T  20000


##################################
##################################
KmA1 96.548
KmA2 331.68
KmB1 270
KmB2 153.82
KmC1 484.9
KmC2 405.43

Xi 0.1153

KiA1 KmA1*Xi
KiA2 KmA2*Xi
KiB1 KmB1*Xi
KiB2 KmB2*Xi
KiC1 KmC1*Xi
KiC2 KmC2*Xi


Kcat 360

end parameters

################################################################################
#

begin molecule types

LCK(b,Y394~U~P,Y505~U~P)
A1(Y~U~P~X)
A2(Y~U~P~X)
B1(Y~U~P~X)
B2(Y~U~P~X)
C1(Y~U~P~X)
C2(Y~U~P~X)


end molecule types

################################################################################
#

begin seed species

LCK(b,Y394~P,Y505~U) LCK_T
A1(Y~U) CD3z_T
A2(Y~U) CD3z_T
B1(Y~U) CD3z_T
B2(Y~U) CD3z_T
C1(Y~U) CD3z_T
C2(Y~U) CD3z_T


end seed species

################################################################################
#

begin observables
Molecules Total_A1 A1(Y~P!?)
Molecules Total_A2 A2(Y~P!?)
Molecules Total_B1 B1(Y~P!?)
Molecules Total_B2 B2(Y~P!?)
Molecules Total_C1 C1(Y~P!?)
Molecules Total_C2 C2(Y~P!?)
```

```
Molecules U_A1 A1(Y~U!?)
Molecules U_A2 A2(Y~U!?)
Molecules U_B1 B1(Y~U!?)
Molecules U_B2 B2(Y~U!?)
Molecules U_C1 C1(Y~U!?)
Molecules U_C2 C2(Y~U!?)


Molecules F_A1   A1(Y~X!?)
Molecules F_A2   A2(Y~X!?)
Molecules F_B1   B1(Y~X!?)
Molecules F_B2   B2(Y~X!?)
Molecules F_C1   C1(Y~X!?)
Molecules F_C2   C2(Y~X!?)




end observables

##############################################################################################
#

begin reaction rules # CD3z(A1~?,A2~?,B1~?,B2~?,C1~?,C2~?)

A1(Y~U) + LCK(b,Y394~P,Y505~U) -> A1(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmA1)/(1 + U_A1/KmA1 + U_A2/KmA2 + U_B1/KmB1 + U_B2/KmB2 + U_C1/KmC1
+ U_C2/KmC2 + Total_A1/KiA1 + Total_A2/KiA2 + Total_B1/KiB1 + Total_B2/KiB2
+ Total_C1/KiC1 + Total_C2/KiC2)
A2(Y~U) + LCK(b,Y394~P,Y505~U) -> A2(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmA2)/(1 + U_A1/KmA1 + U_A2/KmA2 + U_B1/KmB1 + U_B2/KmB2 + U_C1/KmC1
+ U_C2/KmC2 + Total_A1/KiA1 + Total_A2/KiA2 + Total_B1/KiB1 + Total_B2/KiB2
+ Total_C1/KiC1 + Total_C2/KiC2)


B1(Y~U) + LCK(b,Y394~P,Y505~U) -> B1(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmB1)/(1 + U_A1/KmA1 + U_A2/KmA2 + U_B1/KmB1 + U_B2/KmB2 + U_C1/KmC1
+ U_C2/KmC2 + Total_A1/KiA1 + Total_A2/KiA2 + Total_B1/KiB1 + Total_B2/KiB2
+ Total_C1/KiC1 + Total_C2/KiC2)
B2(Y~U) + LCK(b,Y394~P,Y505~U) -> B2(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmB2)/(1 + U_A1/KmA1 + U_A2/KmA2 + U_B1/KmB1 + U_B2/KmB2 + U_C1/KmC1
+ U_C2/KmC2 + Total_A1/KiA1 + Total_A2/KiA2 + Total_B1/KiB1 + Total_B2/KiB2
+ Total_C1/KiC1 + Total_C2/KiC2)


C1(Y~U) + LCK(b,Y394~P,Y505~U) -> C1(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmC1)/(1 + U_A1/KmA1 + U_A2/KmA2 + U_B1/KmB1 + U_B2/KmB2 + U_C1/KmC1
+ U_C2/KmC2 + Total_A1/KiA1 + Total_A2/KiA2 + Total_B1/KiB1 + Total_B2/KiB2
+ Total_C1/KiC1 + Total_C2/KiC2)
C2(Y~U) + LCK(b,Y394~P,Y505~U) -> C2(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmC2)/(1 + U_A1/KmA1 + U_A2/KmA2 + U_B1/KmB1 + U_B2/KmB2 + U_C1/KmC1
+ U_C2/KmC2 + Total_A1/KiA1 + Total_A2/KiA2 + Total_B1/KiB1 + Total_B2/KiB2
+ Total_C1/KiC1 + Total_C2/KiC2)

end reaction rules

end model

generate_network({overwrite=>1});
writeMfile({});
```