

```

begin model
#####
#
begin parameters
# molecules
LCK_T 1
CD3z_T 20000

#####
#####
KmA1 22292
KmA2 1.76E+05
KmB1 1.27E+05
KmB2 57482
KmC1 2.70E+05
KmC2 2.42E+05

Kcat 1892.4

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)
A2(Y~U) + LCK(b,Y394~P,Y505~U) -> A2(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmA2)/(1 + U_A2/KmA2)
```

```
B1(Y~U) + LCK(b,Y394~P,Y505~U) -> B1(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmB1)/(1 + U_B1/KmB1)
B2(Y~U) + LCK(b,Y394~P,Y505~U) -> B2(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmB2)/(1 + U_B2/KmB2)
```

```
C1(Y~U) + LCK(b,Y394~P,Y505~U) -> C1(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmC1)/(1 + U_C1/KmC1)
C2(Y~U) + LCK(b,Y394~P,Y505~U) -> C2(Y~P) + LCK(b,Y394~P,Y505~U)
(Kcat/KmC2)/(1 + U_C2/KmC2)
```

```
end reaction rules
```

```
end model
```

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