

$ds1/dt = -kon*s1*s11 +kcat3*s13 -kon*s1*s12 +kcat1*s4 -kon*s1*s11 +koff4*s14 +2.0*koff1*s4 -konCSK*s3*s1 +koff7*s7 +kcat2*s5 +koff8*s8 -kon*s1*s2 +koff13*s16 -2.0*kon*s1*s1 +2.0*koff2*s5 -2.0*kon*s1*s1 +koffCSKUU*s10 +koff3*s13 -kon*s1*s2 +koff14*s17 -kon*s1*s12 -kon*s1*s2 +koff5*s15 -kon*s1*s11 +koff6*s6 +kcat6*s6 ;$
$ds2/dt = -kon*s1*s2 +koff8*s8 +kcat2*s5 +kcat12*s9 +koff11*s21 +koff7*s7 +koff10*s20 +koff16*s22 +kcatCSKUU*s10 +2.0*kcat8*s8 +kcat5*s15 +koff6*s6 +2.0*koff12*s9 -kon*s1*s2 -kon*s2*s12 -2.0*kon*s2*s2 -kon*s11*s2 -kon*s1*s2 +kcat14*s17 -kon*s11*s2 +kcat10*s20 +kcat7*s7 ;$
$ds3/dt = koffCSKUU*s10 -konCSK*s3*s11 +kcatCSKUU*s10 +kcatCSKPU*s23 -konCSK*s3*s1 +koffCSKPU*s23 ;$
$ds4/dt = -kcat1*s4 +kon*s1*s1 -koff1*s4 ;$
$ds5/dt = -koff2*s5 -kcat2*s5 +kon*s1*s1 ;$
$ds6/dt = -koff6*s6 -kcat6*s6 +kon*s1*s2 ;$
$ds7/dt = kon*s1*s2 -kcat7*s7 -koff7*s7 ;$
$ds8/dt = -kcat8*s8 -koff8*s8 +kon*s1*s2 ;$
$ds9/dt = -koff12*s9 -kcat12*s9 +kon*s2*s2 ;$
$ds10/dt = konCSK*s3*s1 -kcatCSKUU*s10 -koffCSKUU*s10 ;$
$ds11/dt = -kon*s11*s12 +kcat9*s18 +2.0*kcat4*s14 +kcat1*s4 -kon*s1*s11 -kon*s1*s11 +koff11*s21 +2.0*koff9*s18 +kcat11*s21 -konCSK*s3*s11 +koff10*s20 +koff4*s14 +kcat5*s15 -2.0*kon*s11*s11 +koff5*s15 -kon*s1*s11 -kon*s11*s2 +koffCSKPU*s23 +kcat13*s16 +koff3*s13 +koff15*s19 -kon*s11*s2 +kcat7*s7 ;$
$ds12/dt = kcat14*s17 +kcat10*s20 +koff15*s19 +kcat13*s16 -kon*s2*s12 +kcat6*s6 -kon*s1*s12 +koff14*s17 +koff16*s22 +kcat11*s21 +2.0*kcat16*s22 +kcat3*s13 -kon*s1*s12 +2.0*kcat15*s19 +kcatCSKPU*s23 +kcat9*s18 +kcat12*s9 -kon*s11*s12 +koff13*s16 ;$
$ds13/dt = -kcat3*s13 +kon*s1*s11 -koff3*s13 ;$
$ds14/dt = kon*s1*s11 -kcat4*s14 -koff4*s14 ;$
$ds15/dt = -koff5*s15 +kon*s1*s11 -kcat5*s15 ;$
$ds16/dt = -kcat13*s16 +kon*s1*s12 -koff13*s16 ;$
$ds17/dt = -kcat14*s17 +kon*s1*s12 -koff14*s17 ;$
$ds18/dt = -kcat9*s18 +kon*s11*s11 -koff9*s18 ;$
$ds19/dt = kon*s11*s12 -koff15*s19 -kcat15*s19 ;$

$ds_{20}/dt = -k_{off10} \cdot s_{20} - k_{cat10} \cdot s_{20} + k_{on} \cdot s_{11} \cdot s_2 ;$
$ds_{21}/dt = -k_{off11} \cdot s_{21} + k_{on} \cdot s_{11} \cdot s_2 - k_{cat11} \cdot s_{21} ;$
$ds_{22}/dt = k_{on} \cdot s_2 \cdot s_{12} - k_{off16} \cdot s_{22} - k_{cat16} \cdot s_{22} ;$
$ds_{23}/dt = -k_{offCSKPU} \cdot s_{23} - k_{catCSKPU} \cdot s_{23} + k_{onCSK} \cdot s_3 \cdot s_{11} ;$

Free	Symbol	Bound		Symbol
		Enzyme	Substrate	
$U_{394}U_{505}$	S_1	$U_{394}U_{505}$	$U_{394}U_{505}$	S_4
$P_{394}U_{505}$	S_{11}	$U_{394}U_{505}$	$U_{394}U_{505}$	S_5
$U_{394}P_{505}$	S_2	$U_{394}U_{505}$	$P_{394}U_{505}$	S_{13}
$P_{394}P_{505}$	S_{12}	$P_{394}U_{505}$	$U_{394}U_{505}$	S_{14}
CSK	S_3	$P_{394}U_{505}$	$U_{394}U_{505}$	S_{15}
		$U_{394}U_{505}$	$U_{394}P_{505}$	S_6
		$U_{394}P_{505}$	$U_{394}U_{505}$	S_7
		$U_{394}P_{505}$	$U_{394}U_{505}$	S_8
		$P_{394}U_{505}$	$P_{394}U_{505}$	S_{18}
		$U_{394}P_{505}$	$P_{394}U_{505}$	S_{20}
		$P_{394}U_{505}$	$U_{394}P_{505}$	S_{21}
		$U_{394}P_{505}$	$U_{394}P_{505}$	S_9
		$P_{394}P_{505}$	$U_{394}U_{505}$	S_{16}
		$P_{394}P_{505}$	$U_{394}U_{505}$	S_{17}
		$P_{394}P_{505}$	$P_{394}U_{505}$	S_{19}
		$P_{394}P_{505}$	$U_{394}P_{505}$	S_{22}
		CSK	$U_{394}U_{505}$	S_{10}
		CSK	$P_{394}U_{505}$	S_{23}