

SQUAD model

Dynamic variables + starting concentrations

P2Y12	0
P2Y1	0
Cac	0
Rap1	0
Akt	0
Int	0
Src	1.81275146707658e-05 (fitted)
PI3K	0
PTP	12208.5498972262 (fitted)
Throm	0
ThromR	0

Dynamic parameters

P2Y1_decay	0.473605541589502 (fitted)
P2Y12_decay	1.311224584243 (fitted)
P2Y1_Cac	0.262564903033411 (fitted)
Cac_reuptake	1.16006274259696 (fitted)
Rap1_Cac	2.98605802899337e-05 (fitted)
Rap1_deact	0.115178489403329 (fitted)
Akt_PI3K	0.0928794298272352 (fitted)
Akt_Src	18.0666459776589 (fitted)
Akt_deact	6.55297153762532 (fitted)
Int_Akt	38078.3609932499 (fitted)
Int_Rap1	0.476931510419281 (fitted)
Int_ThromR	17.5203571996 (fitted)
Int_deact	1.00168195221449 (fitted)
Src_Src	3.50022125981342 (fitted)
Src_PTP	29479.7033034441 (fitted)
PTP_Src	2.1894335236633 (fitted)
PTP_PTP	0.00192534456141202 (fitted)
PTP_deact	5.90147225148781 (fitted)
Src_Int	0.000212925981051457 (fitted)
Src_deact	0.474687549992427 (fitted)
PI3K_P2Y12	3.54074679376809 (fitted)
PI3K_deact	190.994110206951 (fitted)
Throm_Int	3744.26406968954 (fitted)
Throm_deact	9.37989945700861 (fitted)
ThromR_Throm	0.0407260335395034 (fitted)
ThromR_deact	5.73705603581402 (fitted)
h	9.32960030789937 (fitted)
ADP_input1	0.69480527783859 (fitted)
ADP_input2	0.500402671297665 (fitted)
ADP_input3	0.570849010355235 (fitted)

Driving inputs

ADP
ADP1
ADP2
ADP3
ARC
MSR

Ordinary differential equations

P2Y1: $dP2Y1/dt = -P2Y1_decay*P2Y1+ADP+ADP1*ADP_input1+ADP2*ADP_input2+ADP3*ADP_input3*(1-MSR)$

P2Y12: $dP2Y12/dt = (-P2Y12_decay*P2Y12+ADP+ADP1*ADP_input1+ADP2*ADP_input2+ADP3*ADP_input3)*(1-ARC)$

Cac: $dCac/dt = ((-exp(0.5*h)+exp(-h*(((1+P2Y1_Cac)/(P2Y1_Cac))*((P2Y1_Cac*P2Y1)/(1+P2Y1_Cac*P2Y1))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+P2Y1_Cac)/(P2Y1_Cac))*((P2Y1_Cac*P2Y1)/(1+P2Y1_Cac*P2Y1))-0.5)))))-(Cac_reuptake*Cac)$

Rap1: $dRap1/dt = ((-exp(0.5*h)+exp(-h*(((1+Rap1_Cac)/(Rap1_Cac))*((Rap1_Cac*Cac)/(1+Rap1_Cac*Cac))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+Rap1_Cac)/(Rap1_Cac))*((Rap1_Cac*Cac)/(1+Rap1_Cac*Cac))-0.5)))))-(Rap1_deact*Rap1)$

Akt: $dAkt/dt = ((-exp(0.5*h)+exp(-h*(((1+Akt_PI3K+Akt_Src)/(Akt_PI3K+Akt_Src))*((Akt_PI3K*PI3K+Akt_Src*Src)/(1+Akt_PI3K*PI3K+Akt_Src*Src))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+Akt_PI3K+Akt_Src)/(Akt_PI3K+Akt_Src))*((Akt_PI3K*PI3K+Akt_Src*Src)/(1+Akt_PI3K*PI3K+Akt_Src*Src))-0.5)))))-(Akt_deact*Akt)$

Int: $dInt/dt = ((-exp(0.5*h)+exp(-h*(((1+Int_Rap1+Int_ThromR+Int_Akt)/(Int_Rap1+Int_ThromR+Int_Akt))*((Int_Rap1*Rap1+Int_ThromR*ThromR+Int_Akt*Akt)/(1+Int_Rap1*Rap1+Int_ThromR*ThromR+Int_Akt*Akt))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+Int_Rap1+Int_ThromR+Int_Akt)/(Int_Rap1+Int_ThromR+Int_Akt))*((Int_Rap1*Rap1+Int_ThromR*ThromR+Int_Akt*Akt)/(1+Int_Rap1*Rap1+Int_ThromR*ThromR+Int_Akt*Akt))-0.5)))))-(Int_deact*Int)$

Src: $dSrc/dt = ((-exp(0.5*h)+exp(-h*(((1+Src_Int+Src_Src)/(Src_Int+Src_Src))*((Src_Int*Int+Src_Src*Src)/(1+Src_Int*Int+Src_Src*Src))*((1-((1+Src_PTP)/(Src_PTP))*((Src_PTP*PTP)/(1+Src_PTP*PTP)))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+Src_Int+Src_Src)/(Src_Int+Src_Src))*((Src_Int*Int+Src_Src*Src)/(1+Src_Int*Int+Src_Src*Src))*((1-((1+Src_PTP)/(Src_PTP))*((Src_PTP*PTP)/(1+Src_PTP*PTP)))-0.5)))))-(Src_deact*Src)$

PTP: $dPTP/dt = ((-exp(0.5*h)+exp(-h*(((1+PTP_PTP)/(PTP_PTP))*((PTP_PTP*PTP)/(1+PTP_PTP*PTP)))*((1-((1+PTP_Src)/(PTP_Src))*((PTP_Src*Src)/(1+PTP_Src*Src)))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+PTP_PTP)/(PTP_PTP))*((PTP_PTP*PTP)/(1+PTP_PTP*PTP)))*((1-((1+PTP_Src)/(PTP_Src))*((PTP_Src*Src)/(1+PTP_Src*Src)))-0.5)))))-(PTP_deact*PTP)$

PI3K: $dPI3K/dt = ((-exp(0.5*h)+exp(-h*(((1+PI3K_P2Y12)/(PI3K_P2Y12))*((PI3K_P2Y12*P2Y12)/(1+PI3K_P2Y12*P2Y12))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+PI3K_P2Y12)/(PI3K_P2Y12))*((PI3K_P2Y12*P2Y12)/(1+PI3K_P2Y12*P2Y12))-0.5)))))-(PI3K_deact*PI3K)$

Throm: $dThrom/dt = ((-exp(0.5*h)+exp(-h*(((1+Throm_Int)/(Throm_Int))*((Throm_Int*Int)/(1+Throm_Int*Int))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+Throm_Int)/(Throm_Int))*((Throm_Int*Int)/(1+Throm_Int*Int))-0.5)))))-(Throm_deact*Throm)$

ThromR: $dThromR/dt = ((-exp(0.5*h)+exp(-h*(((1+ThromR_Throm)/(ThromR_Throm))*((ThromR_Throm*Throm)/(1+ThromR_Throm*Throm))-0.5)))/((1-exp(0.5*h))*(1+exp(-h*(((1+ThromR_Throm)/(ThromR_Throm))*((ThromR_Throm*Throm)/(1+ThromR_Throm*Throm))-0.5)))))-(ThromR_deact*ThromR)$

Observation parameters

scale_Int_obs	1
scale_Cac_obs	0.991926388154692 (fitted)
scale_Rap_obs	0.759324549929283 (fitted)
scale_Akt_obs	75119.9143231632 (fitted)