

HillCube model

Dynamic variables + starting concentrations

Cac	0
P2Y1	0
Rap1	0
Int	0
Src	1.00065375076016e-05 (fitted)
PTP	0.000771458137212347 (fitted)
P2Y12	0
PI3K	0
Akt	0
Throm	0
ThromR	0

Dynamic parameters

Cac_tau	1.14706579612486	(fitted)
Cac_k_P2Y1	0.578940473361213	(fitted)
P2Y1_tau	1.10488902213936	(fitted)
P2Y1_k_ADP	68656.2765082096	(fitted)
P2Y1_k_ADP1	4.53681511736711	(fitted)
P2Y1_k_ADP2	99934.0229821775	(fitted)
P2Y1_k_ADP3	0.000401092879055109	(fitted)
Rap1_tau	0.000756375463342874	(fitted)
Rap1_k_Cac	0.00120854795019044	(fitted)
Int_tau	0.546790100562961	(fitted)
Int_k_Rap1	2.69222340259396	(fitted)
Int_k_Akt	0.168866125846509	(fitted)
Int_k_ThromR	5.14606732385519	(fitted)
Src_tau	0.00235492792312395	(fitted)
Src_k_Int	0.209190861070864	(fitted)
Src_k_Src	1.20908136803667	(fitted)
Src_k_PTP	0.00375926842191643	(fitted)
PTP_tau	4.25086427682922	(fitted)
PTP_k_PTP	0.1039185774936	(fitted)
PTP_k_Src	0.0222346816752048	(fitted)
P2Y12_tau	2398.41448068728	(fitted)
P2Y12_k_ADP	1.00067210175258e-06	(fitted)
P2Y12_k_ADP1	0.0142968781106495	(fitted)
P2Y12_k_ADP2	0.000167355613819358	(fitted)
P2Y12_k_ADP3	0.272565889803558	(fitted)
P2Y12_k_ARC	0.000815540865757472	(fitted)
PI3K_tau	0.278829201570762	(fitted)
PI3K_k_P2Y12	0.314336360772427	(fitted)
Akt_tau	0.64781493280581	(fitted)
Akt_k_P2Y12	9.6972228581864	(fitted)
Akt_k_Src	1.96920190329364	(fitted)
Throm_tau	2.41497000853943	(fitted)
Throm_k_Int	0.00339158709959841	(fitted)
ThromR_tau	2.37908262308191	(fitted)
ThromR_k_Throm	19.7110914106133	(fitted)
h	1	

Driving inputs

ADP
ADP1
ADP2
ADP3
ARC

$$\begin{aligned} & (\text{ARC}^h + \text{P2Y12_k_ARC}^h) + \text{ADP}^h / (\text{ADP}^h + \text{P2Y12_k_ADP}^h) * (1 - \text{ADP1}^h / (\text{ADP1}^h + \text{P2Y12_k_ADP1}^h)) * \text{ADP2}^h / \\ & (\text{ADP2}^h + \text{P2Y12_k_ADP2}^h) * \text{ADP3}^h / (\text{ADP3}^h + \text{P2Y12_k_ADP3}^h) * (1 - \text{ARC}^h / (\text{ARC}^h + \text{P2Y12_k_ARC}^h)) + (1 - \text{ADP}^h / \\ & (\text{ADP}^h + \text{P2Y12_k_ADP}^h)) * \text{ADP1}^h / (\text{ADP1}^h + \text{P2Y12_k_ADP1}^h) * \text{ADP2}^h / (\text{ADP2}^h + \text{P2Y12_k_ADP2}^h) * \text{ADP3}^h / \\ & (\text{ADP3}^h + \text{P2Y12_k_ADP3}^h) * (1 - \text{ARC}^h / (\text{ARC}^h + \text{P2Y12_k_ARC}^h)) + \text{ADP}^h / (\text{ADP}^h + \text{P2Y12_k_ADP}^h) * \text{ADP1}^h / \\ & (\text{ADP1}^h + \text{P2Y12_k_ADP1}^h) * \text{ADP2}^h / (\text{ADP2}^h + \text{P2Y12_k_ADP2}^h) * \text{ADP3}^h / (\text{ADP3}^h + \text{P2Y12_k_ADP3}^h) * (1 - \text{ARC}^h / \\ & (\text{ARC}^h + \text{P2Y12_k_ARC}^h)) - \text{P2Y12} / \text{P2Y12_tau} \end{aligned}$$

$$\mathbf{PI3K:} \quad d\text{PI3K}/dt = (\text{P2Y12}^h / (\text{P2Y12}^h + \text{PI3K_k_P2Y12}^h) - \text{PI3K}) / \text{PI3K_tau}$$

$$\mathbf{Akt:} \quad d\text{Akt}/dt = (\text{P2Y12}^h / (\text{P2Y12}^h + \text{Akt_k_P2Y12}^h)) * (1 - \text{Src}^h / (\text{Src}^h + \text{Akt_k_Src}^h)) + (1 - \text{P2Y12}^h / (\text{P2Y12}^h + \text{Akt_k_P2Y12}^h)) * \text{Src}^h / (\text{Src}^h + \text{Akt_k_Src}^h) + \text{P2Y12}^h / (\text{P2Y12}^h + \text{Akt_k_P2Y12}^h) * \text{Src}^h / (\text{Src}^h + \text{Akt_k_Src}^h) - \text{Akt} / \text{Akt_tau}$$

$$\mathbf{Throm:} \quad d\text{Throm}/dt = (\text{Int}^h / (\text{Int}^h + \text{Throm_k_Int}^h) - \text{Throm}) / \text{Throm_tau}$$

$$\mathbf{ThromR:} \quad d\text{ThromR}/dt = (\text{Throm}^h / (\text{Throm}^h + \text{ThromR_k_Throm}^h) - \text{ThromR}) / \text{ThromR_tau}$$

Observation parameters

scale_Cac_obs 4.5714654658618 (fitted)
 scale_Int_obs 136.492923059178 (fitted)
 scale_Rap1_obs 0.760176007753641 (fitted)
 scale_Akt_obs 3.01027503632714 (fitted)