SBML Model Report

Model name: "Maeda2006_MyosinPhosphorylation"

May 6, 2016

1 General Overview

This is a document in SBML Level 2 Version 1 format. This model was created by the following two authors: Harish Dharuri[1] and Hiroshi Kobayashi[2] at September 30th 2006 at 5:25 p. m. and last time modified at April eighth 2016 at 3:36 p. m. Table 1 shows an overview of the quantities of all components of this model.

Table 1: Number of components in this model, which are described in the following sections.

Element	Quantity	Element	Quantity
compartment types	0	compartments	3
species types	0	species	105
events	1	constraints	0
reactions	110	function definitions	0
global parameters	0	unit definitions	6
rules	0	initial assignments	0

Model Notes

The model reproduces Fig 2B, D, F, and 2H. The dynamics correspond to a stimulus of 1 U/ml of thrombin which is equal to 0.01 uM. Phosphorylated MLC is the sum of pMLC (s359) and ppMLC (s360). A slight discrepancy in peak values of species between the figure in the paper and simulation result might be due to different initial conditions in the two sets. The model was

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successfully tested on MathSBML. It is possible to simulate the model on other software that do not support „Events„ at this time by removing the „listOfEvents„ and substituting a value of 0.01 for thrombin (s2). This does not change the model very much. With the latter format, the model was also successfully tested on Copasi.

To cite BioModels Database, please use: Li C, Donizelli M, Rodriguez N, Dharuri H, Endler L, Chelliah V, Li L, He E, Henry A, Stefan MI, Snoep JL, Hucka M, Le Novre N, Laibe C (2010) BioModels Database: An enhanced, curated and annotated resource for published quantitative kinetic models. BMC Syst Biol., 4:92.

2 Unit Definitions

This is an overview of ten unit definitions of which four are predefined by SBML and not mentioned in the model.

2.1 Unit `substance`

Name micromoles

Definition $\mu\mathrm{mol}$

2.2 Unit `microMolar`

Name microMolar

Definition $\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$

2.3 Unit `per_uM_per_sec`

Name per_uM_per_sec

Definition $\mu\mathrm{mol}^{-1} \cdot \mathrm{l} \cdot \mathrm{s}^{-1}$

2.4 Unit `per_sec`

Name per_sec

Definition s^{-1}

2.5 Unit per_uM2_per_sec

Name per_uM2_per_sec

Definition $\mu\text{mol}^{-2} \cdot \text{l}^{2} \cdot \text{s}^{-1}$

2.6 Unit per_uM3_per_sec

Name per_uM3_per_sec

Definition $\mu\text{mol}^{-3} \cdot \text{l}^{3} \cdot \text{s}^{-1}$

2.7 Unit volume

Notes Litre is the predefined SBML unit for `volume`.

Definition l

2.8 Unit area

Notes Square metre is the predefined SBML unit for `area` since SBML Level 2 Version 1.

Definition m^{2}

2.9 Unit length

Notes Metre is the predefined SBML unit for `length` since SBML Level 2 Version 1.

Definition m

2.10 Unit time

Notes Second is the predefined SBML unit for `time`.

Definition s

3 Compartments

This model contains three compartments.

Table 2: Properties of all compartments.

Id	Name	SBO	Spatial Dimensions	Size	Unit	Constant	Outside
c0	Default		3	1	litre	☑	
c1	cytosol		3	1	litre	☑	c0
c2	ER		3	0.1	l	☑	c1

3.1 Compartment c0

This is a three dimensional compartment with a constant size of one litre.

Name Default

3.2 Compartment c1

This is a three dimensional compartment with a constant size of one litre, which is surrounded by c0 (Default).

Name cytosol

3.3 Compartment c2

This is a three dimensional compartment with a constant size of 0.1 litre, which is surrounded by c1 (cytosol).

Name ER

4 Species

This model contains 105 species. The boundary condition of five of these species is set to `true` so that these species' amount cannot be changed by any reaction. Section 7 provides further details and the derived rates of change of each species.

Table 3: Properties of each species.

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
s2	thrombin	c0	$\mu mol \cdot l^{-1}$	⊟	☑
s174	thrombin_R	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s130	pro_thrombinR	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s4	thrombin_ligand	c0	$\mu mol \cdot l^{-1}$	⊟	⊟
s57	thrombinR active	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s93	RGS	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s165	Inositol	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s183	sa40_degraded	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s55	thrombinR	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s184	RGS	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s48	GTP	c1	$\mu mol \cdot l^{-1}$	⊟	☑
s187	G_sub_q_endsub__alpha_.GTP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s50	GDP	c1	$\mu mol \cdot l^{-1}$	⊟	☑
s171	IP3R	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s173	3IP3.IP3R	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s98	p115RhoGEF	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s124	Rho-kinase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s118	RhoGAP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s153	DAG	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s152	IP3	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s213	Rho_GAP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
s214	Rho.GTP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s151	PIP2	c1	$\mu mol \cdot l^{-1}$	⊟	☑
s164	PC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s231	Rho.GDP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s233	Rho_GEF	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s245	Rho_GEF_active	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s252	Rho.GTP.Rho-kinase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s277	Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s278	2Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s279	3Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s280	4Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s289	MLCK	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s292	MLCK.Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s293	MLCK.2Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s294	MLCK.3Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s295	MLCK.4Ca_super_2_plus__endsuper_.CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s309	PKC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s310	PKC active1	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s311	PKC.DAG	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s314	PKC active_2	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s324	PKC active_3	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s329	csa39_degraded	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s330	csa36_degraded	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s331	csa35_degraded	c1	$\mu mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
s332	PKC active_1.CPI	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s335	PKC active_2.CPI	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s338	PKC active_3.CPI	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s352	CPI-17.MYPT1_PPase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s355	CPI-17.MYPT1_PPase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s349	CPI-17	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s360	MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s358	MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s361	Rho-kinase.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s362	Rho-kinase.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s350	CPI-17	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s135	Ca_super_2_plus__endsuper_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s276	CaM	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s172	Ca_super_2_plus__endsuper_ store	c2	$\mu mol \cdot l^{-1}$	⊟	⊟
s410	G_beta__gamma__1	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s421	G_beta__gamma__2	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s424	PLC_beta_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s430	Ca_super_2_plus__endsuper_ trunsp	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s432	Ca_super_2_plus__endsuper_ pump	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s435	G_sub_12_endsub__alpha__beta__gamma_-_thrombinR active	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s436	p115RhoGEF.GTP_alpha_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s437	G_sub_12_endsub__alpha__beta__gamma_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s438	G_sub_12_endsub__alpha_.GDP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s439	G_sub_12_endsub__alpha_.GTP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s440	G_sub_q_endsub__alpha_.GDP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
s441	G_sub_q_endsub__alpha__beta__gamma_-_thrombinR active	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s442	G_sub_q_endsub__alpha__beta__gamma_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s443	PLC_beta_.G_sub_q_endsub__alpha_.GTP	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s444	2Ca_super_2_plus__endsuper_ .Ca_super-_2_plus__endsuper_ trunsp	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s446	Ca_super_2_plus__endsuper_ pump.Ca-_super_2_plus__endsuper_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s449	Rho.GTP.Rho-kinase.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s456	Rho.GTP.Rho-kinase.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s359	MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s463	MYPT1.Rho-kinase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s467	MYPT1.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s470	MYPT1.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s477	MYPT1.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s480	MYPT1.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s491	MLCK.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s487	MLCK.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s496	MYPT1.Rho-kinase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s506	MLCK.4Ca_super_2_plus__endsuper-_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s512	MLCK.3Ca_super_2_plus__endsuper-_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s513	MLCK.4Ca_super_2_plus__endsuper-_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s520	MLCK.3Ca_super_2_plus__endsuper-_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
s526	MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s539	MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s546	MLCK.Ca_super_2_plus__endsuper_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s551	MLCK.Ca_super_2_plus__endsuper_.CaM.MLC	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s556	Ca_super_2_plus__endsuper_ ext leak	c1	$\mu mol \cdot l^{-1}$	☑	⊟
s267	Ca_super_2_plus__endsuper_ ext	c0	$\mu mol \cdot l^{-1}$	☑	☑
s557	Ca_super_2_plus__endsuper_ int leak	c1	$\mu mol \cdot l^{-1}$	☑	⊟
s564	PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s565	PKC.Ca_super_2_plus__endsuper_.DAG	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s566	PKC.Ca_super_2_plus__endsuper_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s567	PLC_beta_.G_sub_q_endsub_.GTP.Ca.PIP2	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s568	PLC_beta_.Ca.PIP2	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s569	PLC_beta_.Ca_super_2_plus__endsuper_	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s351	MYPT1_PPase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟
s570	MYPT1_PPase	c1	$\mu mol \cdot l^{-1}$	⊟	⊟

5 Event

This is an overview of one event. Each event is initiated whenever its trigger condition switches from `false` to `true`. A delay function postpones the effects of an event to a later time point. At the time of execution, an event can assign values to species, parameters or compartments if these are not set to constant.

5.1 Event `event_0000001`

Trigger condition

$$t \geq 300 \tag{1}$$

Assignment

$$s2 = 0.01 \tag{2}$$

6 Reactions

This model contains 110 reactions. All reactions are listed in the following table and are subsequently described in detail. If a reaction is affected by a modifier, the identifier of this species is written above the reaction arrow.

Table 4: Overview of all reactions

№	Id	Name	Reaction Equation	SBO
1	re1	A2-1.1	$s2 + s130 \rightleftharpoons s174$	
2	re12	A1-2	$s48 + s435 \longrightarrow s439 + s410 + s50 + s55$	
3	re14	A1-5.1	$s55 \longrightarrow s183$	
4	re15	A1-3	$s442 + s57 \rightleftharpoons s441$	
5	re16	A1-4	$s441 + s48 \longrightarrow s187 + s55 + s50 + s421$	
6	re17	A1-6	$s439 \longrightarrow s438$	
7	re19	A1-7	$s410 + s438 \longrightarrow s437$	
8	re20	A2-2.1	$s93 + s187 \rightleftharpoons s184$	
9	re22	A1-9	$s421 + s440 \longrightarrow s442$	
10	re23	B1-1	$s439 + s98 \rightleftharpoons s436$	
11	re24	B2-1.1	$s231 \xrightarrow{s436} s214$	
12	re26	B2-2.1	$s98 + s231 \rightleftharpoons s233$	
13	re28	B2-3.1	$s118 + s214 \rightleftharpoons s213$	
14	re32	B2-1.2	$s233 \longrightarrow s214 + s98$	
15	re33	B2-3.2	$s213 \longrightarrow s231 + s118$	
16	re34	A2-2.2	$s184 \longrightarrow s440 + s93$	
17	re37	B1-2	$s436 \longrightarrow s438 + s98$	
18	re38	B1-3	$s214 \longrightarrow s231$	
19	re39	B1-4	$s124 + s214 \rightleftharpoons s252$	
20	re40	A2-1.2	$s174 \longrightarrow s57 + s4 + s2$	
21	re43	A1-1	$s437 + s57 \rightleftharpoons s435$	
22	re44	A1-8	$s187 \longrightarrow s440$	

№	Id	Name	Reaction Equation	SBO
23	re45	A1-5.2	$s57 \longrightarrow s183$	
24	re47	C1-2	$s187 + s569 \rightleftharpoons s564$	
25	re48	C1-3	$s424 + s187 \rightleftharpoons s443$	
26	re51	C1-4	$s135 + s443 \rightleftharpoons s564$	
27	re52	C1-1	$s424 + s135 \rightleftharpoons s569$	
28	re54	C1-5	$s564 \longrightarrow s569 + s440$	
29	re55	C2-1.1	$s569 + s151 \rightleftharpoons s568$	
30	re56	C2-2.1	$s564 + s151 \rightleftharpoons s567$	
31	re57	C2-1.2	$s568 \longrightarrow s152 + s153 + s569$	
32	re58	C2-2.2	$s567 \longrightarrow s153 + s152 + s564$	
33	re59	C1-6	$s153 \longrightarrow s164$	
34	re60	C1-7	$s152 \longrightarrow s165$	
35	re68	C1-8	$s171 + 3\,s152 \rightleftharpoons s173$	
36	re73	D3-1	$s172 \overset{s173}{\rightleftharpoons} s135$	
37	re85	D1-2	$s444 \longrightarrow 2\,s172 + s430$	
38	re86	D1-3	$s276 + s135 \rightleftharpoons s277$	
39	re87	D1-4	$s277 + s135 \rightleftharpoons s278$	
40	re88	D1-6	$s279 + s135 \rightleftharpoons s280$	
41	re89	D1-5	$s278 + s135 \rightleftharpoons s279$	
42	re90	D1-10	$s280 + s289 \rightleftharpoons s295$	
43	re91	D1-9	$s279 + s289 \rightleftharpoons s294$	
44	re92	D1-8	$s278 + s289 \rightleftharpoons s293$	
45	re93	D1-7	$s277 + s289 \rightleftharpoons s292$	
46	re94	E1-1	$s309 \rightleftharpoons s310$	
47	re95	E1-3	$s309 + s153 \rightleftharpoons s311$	
48	re96	E1-5	$s566 \rightleftharpoons s314$	
49	re97	E1-4	$s309 + s135 \rightleftharpoons s566$	
50	re98	D2-1.2	$s446 \longrightarrow s432 + s267$	

№	Id	Name	Reaction Equation	SBO
51	re100	D1-1	$s430 + 2\,s135 \rightleftharpoons s444$	
52	re101	E1-7	$s566 + s153 \rightleftharpoons s565$	
53	re102	E1-8	$s565 \rightleftharpoons s324$	
54	re106	E1-9	$s324 \longrightarrow s329$	
55	re107	E1-6	$s314 \longrightarrow s330$	
56	re108	E1-2	$s310 \longrightarrow s331$	
57	re109	D2-1.1	$s432 + s135 \rightleftharpoons s446$	
58	re110	E2-1.1.3	$s324 + s349 \rightleftharpoons s338$	
59	re111	E2-1.1.2	$s314 + s349 \rightleftharpoons s335$	
60	re112	E2-1.1.1	$s310 + s349 \rightleftharpoons s332$	
61	re113	E2-1.2.3	$s338 \longrightarrow s324 + s350$	
62	re114	E2-1.2.2	$s335 \longrightarrow s314 + s350$	
63	re115	E2-1.2.1	$s332 \longrightarrow s310 + s350$	
64	re116	E1-10	$s350 \longrightarrow s349$	
65	re117	E1-11	$s351 + s350 \rightleftharpoons s352$	
66	re118	E1-12	$s351 + s349 \rightleftharpoons s355$	
67	re119	E1-13	$s352 \longrightarrow s355$	
68	re120	F2-1.1	$s124 + s358 \rightleftharpoons s361$	
69	re121	F2-2.1	$s124 + s359 \rightleftharpoons s362$	
70	re123	F2-1.2	$s361 \longrightarrow s359 + s124$	
71	re124	F2-2.2	$s362 \longrightarrow s360 + s124$	
72	re125	F2-3.1	$s252 + s358 \rightleftharpoons s456$	
73	re126	F2-4.1	$s252 + s359 \longrightarrow s449$	
74	re127	F2-3.2	$s456 \longrightarrow s252 + s359$	
75	re128	F2-4.2	$s449 \longrightarrow s252 + s360$	
76	re129	F2-14.1	$s124 + s351 \rightleftharpoons s463$	
77	re130	F2-14.2	$s463 \longrightarrow s124 + s570$	
78	re131	F2-13.1	$s252 + s351 \rightleftharpoons s496$	
79	re132	F2-13.2	$s496 \longrightarrow s252 + s570$	

№	Id	Name	Reaction Equation	SBO
80	re133	F2-11.1	$s360 + s570 \rightleftharpoons s467$	
81	re134	F2-9.1	$s360 + s351 \rightleftharpoons s470$	
82	re135	F2-12.1	$s359 + s570 \rightleftharpoons s477$	
83	re136	F2-10.1	$s359 + s351 \rightleftharpoons s480$	
84	re137	F2-11.2	$s467 \longrightarrow s359 + s570$	
85	re138	F2-9.2	$s470 \longrightarrow s359 + s351$	
86	re139	F2-12.2	$s477 \longrightarrow s358 + s570$	
87	re140	F2-10.2	$s480 \longrightarrow s358 + s351$	
88	re141	F1-1	$s570 \longrightarrow s351$	
89	re154	F2-7.1	$s358 + s289 \rightleftharpoons s487$	
90	re155	F2-8.1	$s359 + s289 \rightleftharpoons s491$	
91	re156	F2-7.2	$s487 \longrightarrow s359 + s289$	
92	re157	F2-8.2	$s491 \longrightarrow s360 + s289$	
93	re158	F2-5.1.1	$s358 + s292 \rightleftharpoons s551$	
94	re159	F2-5.2.1	$s358 + s293 \rightleftharpoons s539$	
95	re160	F2-5.3.1	$s358 + s294 \rightleftharpoons s520$	
96	re161	F2-5.4.1	$s358 + s295 \rightleftharpoons s513$	
97	re162	F2-6.1.1	$s359 + s292 \rightleftharpoons s546$	
98	re163	F2-6.2.1	$s359 + s293 \rightleftharpoons s526$	
99	re164	F2-6.3.1	$s359 + s294 \rightleftharpoons s512$	
100	re165	F2-6.4.1	$s359 + s295 \rightleftharpoons s506$	
101	re166	F2-6.4.2	$s506 \longrightarrow s360 + s295$	
102	re167	F2-5.4.2	$s513 \longrightarrow s359 + s295$	
103	re168	F2-6.3.2	$s512 \longrightarrow s360 + s294$	
104	re169	F2-5.3.2	$s520 \longrightarrow s359 + s294$	
105	re170	F2-6.2.2	$s526 \longrightarrow s360 + s293$	
106	re171	F2-5.2.2	$s539 \longrightarrow s359 + s293$	
107	re172	F2-6.1.2	$s546 \longrightarrow s360 + s292$	
108	re173	F2-5.1.2	$s551 \longrightarrow s359 + s292$	

№	Id	Name	Reaction Equation	SBO
109	re174	D3-3	s267 $\overset{\text{s556}}{\rightleftharpoons}$ s135	
110	re175	D3-2	s172 $\overset{\text{s557}}{\rightleftharpoons}$ s135	

6.1 Reaction re1

This is a reversible reaction of two reactants forming one product.

Name A2-1.1

Reaction equation

$$\mathrm{s2} + \mathrm{s130} \rightleftharpoons \mathrm{s174} \tag{3}$$

Reactants

Table 5: Properties of each reactant.

Id	Name	SBO
s2	thrombin	
s130	pro_thrombinR	

Product

Table 6: Properties of each product.

Id	Name	SBO
s174	thrombin_R	

Kinetic Law

Derived unit contains undeclared units

$$v_1 = \mathrm{vol}(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s130}] \cdot [\mathrm{s2}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s174}] \right) \tag{4}$$

Table 7: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		5.0	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.0	dimensionless	☑
Vmax	Vmax		15.0	s^{-1}	☑

6.2 Reaction re12

This is an irreversible reaction of two reactants forming four products.

Name A1-2

Reaction equation

$$\mathrm{s48} + \mathrm{s435} \longrightarrow \mathrm{s439} + \mathrm{s410} + \mathrm{s50} + \mathrm{s55} \tag{5}$$

Reactants

Table 8: Properties of each reactant.

Id	Name	SBO
s48	GTP	
s435	G_sub_12_endsub__alpha__beta__gamma__thrombinR active	

Products

Table 9: Properties of each product.

Id	Name	SBO
s439	G_sub_12_endsub__alpha_.GTP	
s410	G_beta__gamma__1	
s50	GDP	
s55	thrombinR	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_2 = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s48}] \cdot [\mathrm{s435}] \tag{6}$$

Table 10: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.01	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑

6.3 Reaction re14

This is an irreversible reaction of one reactant forming one product.

Name A1-5.1

Reaction equation

$$\mathrm{s55} \longrightarrow \mathrm{s183} \tag{7}$$

Reactant

Table 11: Properties of each reactant.

Id	Name	SBO
s55	thrombinR	

Product

Table 12: Properties of each product.

Id	Name	SBO
s183	sa40_degraded	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_3 = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s55}] \tag{8}$$

Table 13: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.002	s^{-1}	☑

6.4 Reaction re15

This is a reversible reaction of two reactants forming one product.

Name A1-3

Reaction equation

$$\mathrm{s442} + \mathrm{s57} \rightleftharpoons \mathrm{s441} \tag{9}$$

Reactants

Table 14: Properties of each reactant.

Id	Name	SBO
s442	G_sub_q_endsub__alpha__beta__gamma_	
s57	thrombinR active	

Product

Table 15: Properties of each product.

Id	Name	SBO
s441	G_sub_q_endsub__alpha__beta__gamma__thrombinR active	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_4 = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s442}] \cdot [\mathrm{s57}] - \mathrm{kb} \cdot [\mathrm{s441}]) \tag{10}$$

Table 16: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		1.000	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.006	s^{-1}	☑

6.5 Reaction re16

This is an irreversible reaction of two reactants forming four products.

Name A1-4

Reaction equation

$$\mathrm{s441} + \mathrm{s48} \longrightarrow \mathrm{s187} + \mathrm{s55} + \mathrm{s50} + \mathrm{s421} \tag{11}$$

Reactants

Table 17: Properties of each reactant.

Id	Name	SBO
s441	G_sub_q_endsub__alpha__beta__gamma__thrombinR active	
s48	GTP	

Products

Table 18: Properties of each product.

Id	Name	SBO
s187	G_sub_q_endsub__alpha_.GTP	
s55	thrombinR	
s50	GDP	
s421	G_beta__gamma__2	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_5 = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s48}] \cdot [\mathrm{s441}] \tag{12}$$

Table 19: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.01	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑

6.6 Reaction re17

This is an irreversible reaction of one reactant forming one product.

Name A1-6

Reaction equation

$$\mathrm{s439} \longrightarrow \mathrm{s438} \tag{13}$$

Reactant

Table 20: Properties of each reactant.

Id	Name	SBO
s439	G_sub_12_endsub__alpha_.GTP	

Product

Table 21: Properties of each product.

Id	Name	SBO
s438	G_sub_12_endsub__alpha_.GDP	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_6 = \mathrm{vol}(c1) \cdot kf \cdot [s439] \tag{14}$$

Table 22: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.013	s^{-1}	☑

6.7 Reaction re19

This is an irreversible reaction of two reactants forming one product.

Name A1-7

Reaction equation

$$s410 + s438 \longrightarrow s437 \tag{15}$$

Reactants

Table 23: Properties of each reactant.

Id	Name	SBO
s410	G_beta__gamma__1	
s438	G_sub_12_endsub__alpha_.GDP	

Product

Table 24: Properties of each product.

Id	Name	SBO
s437	G_sub_12_endsub__alpha__beta__gamma_	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_7 = \mathrm{vol}(c1) \cdot kf \cdot [s410] \cdot [s438] \tag{16}$$

Table 25: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.01	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑

6.8 Reaction re20

This is a reversible reaction of two reactants forming one product.

Name A2-2.1

Reaction equation

$$s93 + s187 \rightleftharpoons s184 \tag{17}$$

Reactants

Table 26: Properties of each reactant.

Id	Name	SBO
s93	RGS	
s187	G_sub_q_endsub__alpha_.GTP	

Product

Table 27: Properties of each product.

Id	Name	SBO
s184	RGS	

Kinetic Law

Derived unit contains undeclared units

$$v_8 = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s187}] \cdot [\mathrm{s93}]}{\mathrm{Km}} - \mathrm{ratio} \cdot \mathrm{Vmax} \cdot [\mathrm{s184}] \right) \tag{18}$$

Table 28: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.050	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		23.510	dimensionless	☑
Vmax	Vmax		0.010	s^{-1}	☑

6.9 Reaction re22

This is an irreversible reaction of two reactants forming one product.

Name A1-9

Reaction equation

$$\mathrm{s421} + \mathrm{s440} \longrightarrow \mathrm{s442} \tag{19}$$

Reactants

Table 29: Properties of each reactant.

Id	Name	SBO
s421	G_beta__gamma__2	
s440	G_sub_q_endsub__alpha_.GDP	

Product

Table 30: Properties of each product.

Id	Name	SBO
s442	G_sub_q_endsub__alpha__beta__gamma_	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_9 = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s421}] \cdot [\mathrm{s440}] \tag{20}$$

Table 31: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.01	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑

6.10 Reaction re23

This is a reversible reaction of two reactants forming one product.

Name B1-1

Reaction equation

$$\mathrm{s439} + \mathrm{s98} \rightleftharpoons \mathrm{s436} \tag{21}$$

Reactants

Table 32: Properties of each reactant.

Id	Name	SBO
s439	G_sub_12_endsub__alpha_.GTP	
s98	p115RhoGEF	

Product

Table 33: Properties of each product.

Id	Name	SBO
s436	p115RhoGEF.GTP_alpha_	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{10} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s439}] \cdot [\mathrm{s98}] - \mathrm{kb} \cdot [\mathrm{s436}]) \tag{22}$$

Table 34: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		20.0	$\mu\mathrm{mol}^{-1} \cdot \mathrm{l} \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.1	s^{-1}	☑

6.11 Reaction re24

This is an irreversible reaction of one reactant forming one product influenced by one modifier.

Name B2-1.1

Reaction equation

$$\mathrm{s231} \xrightarrow{\mathrm{s436}} \mathrm{s214} \tag{23}$$

Reactant

Table 35: Properties of each reactant.

Id	Name	SBO
s231	Rho.GDP	

Modifier

Table 36: Properties of each modifier.

Id	Name	SBO
s436	p115RhoGEF.GTP_alpha_	

Product

Table 37: Properties of each product.

Id	Name	SBO
s214	Rho.GTP	

Kinetic Law

Derived unit $s^{-1} \cdot 10^{-6}\,mol$

$$v_{11} = \mathrm{vol}(c1) \cdot \frac{\mathrm{Vmax} \cdot [s231] \cdot [s436]}{\mathrm{Km} + [s214]} \tag{24}$$

Table 38: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.015	$\mu mol \cdot l^{-1}$	☑
Vmax	Vmax		0.052	s^{-1}	☑

6.12 Reaction re26

This is a reversible reaction of two reactants forming one product.

Name B2-2.1

Reaction equation

$$s98 + s231 \rightleftharpoons s233 \tag{25}$$

Reactants

Table 39: Properties of each reactant.

Id	Name	SBO
s98	p115RhoGEF	
s231	Rho.GDP	

Product

Table 40: Properties of each product.

Id	Name	SBO
s233	Rho_GEF	

Kinetic Law

Derived unit contains undeclared units

$$v_{12} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s98}] \cdot [\mathrm{s231}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s233}] \right) \tag{26}$$

Table 41: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		2.00	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.00	dimensionless	☑
Vmax	Vmax		0.04	s^{-1}	☑

6.13 Reaction re28

This is a reversible reaction of two reactants forming one product.

Name B2-3.1

Reaction equation

$$\mathrm{s118} + \mathrm{s214} \rightleftharpoons \mathrm{s213} \tag{27}$$

Reactants

Table 42: Properties of each reactant.

Id	Name	SBO
s118	RhoGAP	
s214	Rho.GTP	

Product

Table 43: Properties of each product.

Id	Name	SBO
s213	Rho_GAP	

Kinetic Law

Derived unit contains undeclared units

$$v_{13} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s118}] \cdot [\mathrm{s214}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s213}] \right) \tag{28}$$

Table 44: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		2.830	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		13.246	dimensionless	☑
Vmax	Vmax		0.993	s^{-1}	☑

6.14 Reaction re32

This is an irreversible reaction of one reactant forming two products.

Name B2-1.2

Reaction equation

$$\mathrm{s233} \longrightarrow \mathrm{s214} + \mathrm{s98} \tag{29}$$

Reactant

Table 45: Properties of each reactant.

Id	Name	SBO
s233	Rho_GEF	

Products

Table 46: Properties of each product.

Id	Name	SBO
s214	Rho.GTP	
s98	p115RhoGEF	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{14} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s233] \tag{30}$$

Table 47: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		0.04	s^{-1}	☑

6.15 Reaction re33

This is an irreversible reaction of one reactant forming two products.

Name B2-3.2

Reaction equation

$$s213 \longrightarrow s231 + s118 \tag{31}$$

Reactant

Table 48: Properties of each reactant.

Id	Name	SBO
s213	Rho_GAP	

Products

Table 49: Properties of each product.

Id	Name	SBO
s231	Rho.GDP	
s118	RhoGAP	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{15} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s213}] \tag{32}$$

Table 50: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
`Vmax`	Vmax		0.993	s^{-1}	☑

6.16 Reaction `re34`

This is an irreversible reaction of one reactant forming two products.

Name A2-2.2

Reaction equation

$$\mathrm{s184} \longrightarrow \mathrm{s440} + \mathrm{s93} \tag{33}$$

Reactant

Table 51: Properties of each reactant.

Id	Name	SBO
`s184`	RGS	

Products

Table 52: Properties of each product.

Id	Name	SBO
`s440`	G_sub_q_endsub__alpha_.GDP	
`s93`	RGS	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{16} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s184}] \tag{34}$$

Table 53: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		0.010	s^{-1}	☑

6.17 Reaction re37

This is an irreversible reaction of one reactant forming two products.

Name B1-2

Reaction equation

$$s436 \longrightarrow s438 + s98 \tag{35}$$

Reactant

Table 54: Properties of each reactant.

Id	Name	SBO
s436	p115RhoGEF.GTP_alpha_	

Products

Table 55: Properties of each product.

Id	Name	SBO
s438	G_sub_12_endsub__alpha_.GDP	
s98	p115RhoGEF	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{17} = \mathrm{vol}(c1) \cdot kf \cdot [s436] \tag{36}$$

Table 56: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.012	s^{-1}	☑

6.18 Reaction re38

This is an irreversible reaction of one reactant forming one product.

Name B1-3

Reaction equation

$$\mathrm{s214} \longrightarrow \mathrm{s231} \tag{37}$$

Reactant

Table 57: Properties of each reactant.

Id	Name	SBO
s214	Rho.GTP	

Product

Table 58: Properties of each product.

Id	Name	SBO
s231	Rho.GDP	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{18} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s214}] \tag{38}$$

Table 59: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		$3.667 \cdot 10^{-4}$	s^{-1}	☑

6.19 Reaction re39

This is a reversible reaction of two reactants forming one product.

Name B1-4

Reaction equation

$$\mathrm{s124} + \mathrm{s214} \rightleftharpoons \mathrm{s252} \tag{39}$$

Reactants

Table 60: Properties of each reactant.

Id	Name	SBO
s124	Rho-kinase	
s214	Rho.GTP	

Product

Table 61: Properties of each product.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{19} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s124}] \cdot [\mathrm{s214}] - \mathrm{kb} \cdot [\mathrm{s252}]) \tag{40}$$

Table 62: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.0	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.5	s^{-1}	☑

6.20 Reaction re40

This is an irreversible reaction of one reactant forming three products.

Name A2-1.2

Reaction equation

$$\mathrm{s174} \longrightarrow \mathrm{s57} + \mathrm{s4} + \mathrm{s2} \tag{41}$$

Reactant

Table 63: Properties of each reactant.

Id	Name	SBO
s174	thrombin_R	

Products

Table 64: Properties of each product.

Id	Name	SBO
s57	thrombinR active	
s4	thrombin_ligand	
s2	thrombin	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{20} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s174}] \tag{42}$$

Table 65: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		15.0	s^{-1}	☑

6.21 Reaction re43

This is a reversible reaction of two reactants forming one product.

Name A1-1

Reaction equation

$$\mathrm{s437} + \mathrm{s57} \rightleftharpoons \mathrm{s435} \tag{43}$$

Reactants

Table 66: Properties of each reactant.

Id	Name	SBO
s437	G_sub_12_endsub__alpha__beta__gamma_	
s57	thrombinR active	

Product

Table 67: Properties of each product.

Id	Name	SBO
s435	G_sub_12_endsub__alpha__beta__gamma__thrombinR active	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{21} = \mathrm{vol}(c1) \cdot (kf \cdot [s437] \cdot [s57] - kb \cdot [s435]) \tag{44}$$

Table 68: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		1.000	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		0.006	s^{-1}	☑

6.22 Reaction re44

This is an irreversible reaction of one reactant forming one product.

Name A1-8

Reaction equation

$$s187 \longrightarrow s440 \tag{45}$$

Reactant

Table 69: Properties of each reactant.

Id	Name	SBO
s187	G_sub_q_endsub__alpha_.GTP	

Product

Table 70: Properties of each product.

Id	Name	SBO
s440	G_sub_q_endsub__alpha_.GDP	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{22} = \mathrm{vol}(c1) \cdot kf \cdot [s187] \tag{46}$$

Table 71: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.013	s^{-1}	☑

6.23 Reaction re45

This is an irreversible reaction of one reactant forming one product.

Name A1-5.2

Reaction equation

$$s57 \longrightarrow s183 \tag{47}$$

Reactant

Table 72: Properties of each reactant.

Id	Name	SBO
s57	thrombinR active	

Product

Table 73: Properties of each product.

Id	Name	SBO
s183	sa40_degraded	

Id	Name	SBO

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{23} = \mathrm{vol}(c1) \cdot kf \cdot [s57] \tag{48}$$

Table 74: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.002	s^{-1}	☑

6.24 Reaction re47

This is a reversible reaction of two reactants forming one product.

Name C1-2

Reaction equation

$$s187 + s569 \rightleftharpoons s564 \tag{49}$$

Reactants

Table 75: Properties of each reactant.

Id	Name	SBO
s187	G_sub_q_endsub__alpha_.GTP	
s569	PLC_beta_.Ca_super_2_plus__endsuper_	

Product

Table 76: Properties of each product.

Id	Name	SBO
s564	PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{24} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s187}] \cdot [\mathrm{s569}] - \mathrm{kb} \cdot [\mathrm{s564}]) \tag{50}$$

Table 77: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		25.201	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		1.000	s^{-1}	☑

6.25 Reaction re48

This is a reversible reaction of two reactants forming one product.

Name C1-3

Reaction equation

$$\mathrm{s424} + \mathrm{s187} \rightleftharpoons \mathrm{s443} \tag{51}$$

Reactants

Table 78: Properties of each reactant.

Id	Name	SBO
s424	PLC_beta_	
s187	G_sub_q_endsub__alpha_.GTP	

Product

Table 79: Properties of each product.

Id	Name	SBO
s443	PLC_beta_.G_sub_q_endsub__alpha_.GTP	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{25} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s424}] \cdot [\mathrm{s187}] - \mathrm{kb} \cdot [\mathrm{s443}]) \tag{52}$$

Table 80: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		2.520	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		1.000	s^{-1}	☑

6.26 Reaction re51

This is a reversible reaction of two reactants forming one product.

Name C1-4

Reaction equation

$$s135 + s443 \rightleftharpoons s564 \tag{53}$$

Reactants

Table 81: Properties of each reactant.

Id	Name	SBO
s135	Ca_super_2_plus__endsuper_	
s443	PLC_beta_.G_sub_q_endsub__alpha_.GTP	

Product

Table 82: Properties of each product.

Id	Name	SBO
s564	PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{26} = vol(c1) \cdot (kf \cdot [s135] \cdot [s443] - kb \cdot [s564]) \tag{54}$$

Table 83: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		30.0	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		1.0	s^{-1}	☑

6.27 Reaction re52

This is a reversible reaction of two reactants forming one product.

Name C1-1

Reaction equation

$$\mathrm{s424} + \mathrm{s135} \rightleftharpoons \mathrm{s569} \tag{55}$$

Reactants

Table 84: Properties of each reactant.

Id	Name	SBO
s424	PLC_beta_	
s135	Ca_super_2_plus__endsuper_	

Product

Table 85: Properties of each product.

Id	Name	SBO
s569	PLC_beta_.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{27} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s424}] \cdot [\mathrm{s135}] - \mathrm{kb} \cdot [\mathrm{s569}]) \tag{56}$$

Table 86: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		3.0	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		1.0	s^{-1}	☑

6.28 Reaction re54

This is an irreversible reaction of one reactant forming two products.

Name C1-5

Reaction equation

$$\text{s564} \longrightarrow \text{s569} + \text{s440} \tag{57}$$

Reactant

Table 87: Properties of each reactant.

Id	Name	SBO
s564	PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_	

Products

Table 88: Properties of each product.

Id	Name	SBO
s569	PLC_beta_.Ca_super_2_plus__endsuper_	
s440	G_sub_q_endsub__alpha_.GDP	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{28} = \text{vol}(\text{c1}) \cdot \text{kf} \cdot [\text{s564}] \tag{58}$$

Table 89: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.013	s^{-1}	☑

6.29 Reaction re55

This is a reversible reaction of two reactants forming one product.

Name C2-1.1

Reaction equation

$$\text{s569} + \text{s151} \rightleftharpoons \text{s568} \tag{59}$$

Reactants

Table 90: Properties of each reactant.

Id	Name	SBO
s569	PLC_beta_.Ca_super_2_plus__endsuper_	
s151	PIP2	

Product

Table 91: Properties of each product.

Id	Name	SBO
s568	PLC_beta_.Ca.PIP2	

Kinetic Law

Derived unit contains undeclared units

$$v_{29} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s569}] \cdot [\mathrm{s151}]}{\mathrm{Km}} - \mathrm{ratio} \cdot \mathrm{Vmax} \cdot [\mathrm{s568}] \right) \tag{60}$$

Table 92: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		19.841	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.000	dimensionless	☑
Vmax	Vmax		10.000	s^{-1}	☑

6.30 Reaction re56

This is a reversible reaction of two reactants forming one product.

Name C2-2.1

Reaction equation

$$\mathrm{s564} + \mathrm{s151} \rightleftharpoons \mathrm{s567} \tag{61}$$

Reactants

Table 93: Properties of each reactant.

Id	Name	SBO
s564	PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_	
s151	PIP2	

Product

Table 94: Properties of each product.

Id	Name	SBO
s567	PLC_beta_.G_sub_q_endsub_.GTP.Ca.PIP2	

Kinetic Law

Derived unit contains undeclared units

$$v_{30} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s564}] \cdot [\mathrm{s151}]}{\mathrm{Km}} - \mathrm{ratio} \cdot \mathrm{Vmax} \cdot [\mathrm{s567}] \right) \tag{62}$$

Table 95: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		5.0	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.0	dimensionless	☑
Vmax	Vmax		48.0	s^{-1}	☑

6.31 Reaction re57

This is an irreversible reaction of one reactant forming three products.

Name C2-1.2

Reaction equation

$$\mathrm{s568} \longrightarrow \mathrm{s152} + \mathrm{s153} + \mathrm{s569} \tag{63}$$

Reactant

Table 96: Properties of each reactant.

Id	Name	SBO
s568	PLC_beta_.Ca.PIP2	

Products

Table 97: Properties of each product.

Id	Name	SBO
s152	IP3	
s153	DAG	
s569	PLC_beta_.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{31} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s568}] \tag{64}$$

Table 98: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		10.0	s^{-1}	☑

6.32 Reaction re58

This is an irreversible reaction of one reactant forming three products.

Name C2-2.2

Reaction equation

$$\mathrm{s567} \longrightarrow \mathrm{s153} + \mathrm{s152} + \mathrm{s564} \tag{65}$$

Reactant

Table 99: Properties of each reactant.

Id	Name	SBO
s567	PLC_beta_.G_sub_q_endsub_.GTP.Ca.PIP2	

Products

Table 100: Properties of each product.

Id	Name	SBO
s153	DAG	
s152	IP3	
s564	PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{32} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s567] \tag{66}$$

Table 101: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		48.0	s^{-1}	☑

6.33 Reaction re59

This is an irreversible reaction of one reactant forming one product.

Name C1-6

Reaction equation

$$s153 \longrightarrow s164 \tag{67}$$

Reactant

Table 102: Properties of each reactant.

Id	Name	SBO
s153	DAG	

Product

Table 103: Properties of each product.

Id	Name	SBO
s164	PC	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{33} = \mathrm{vol}(c1) \cdot kf \cdot [s153] \tag{68}$$

Table 104: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.15	s^{-1}	☑

6.34 Reaction re60

This is an irreversible reaction of one reactant forming one product.

Name C1-7

Reaction equation

$$s152 \longrightarrow s165 \tag{69}$$

Reactant

Table 105: Properties of each reactant.

Id	Name	SBO
s152	IP3	

Product

Table 106: Properties of each product.

Id	Name	SBO
s165	Inositol	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{34} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s152}] \tag{70}$$

Table 107: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		2.5	s^{-1}	☑

6.35 Reaction re68

This is a reversible reaction of two reactants forming one product.

Name C1-8

Reaction equation

$$\mathrm{s171} + 3\,\mathrm{s152} \rightleftharpoons \mathrm{s173} \tag{71}$$

Reactants

Table 108: Properties of each reactant.

Id	Name	SBO
s171	IP3R	
s152	IP3	

Product

Table 109: Properties of each product.

Id	Name	SBO
s173	3IP3.IP3R	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{35} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s152}] \cdot [\mathrm{s152}] \cdot [\mathrm{s152}] \cdot [\mathrm{s171}] - \mathrm{kb} \cdot [\mathrm{s173}]) \tag{72}$$

Table 110: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.1	$\mu mol^{-3} \cdot l^3 \cdot s^{-1}$	☑
kb	kb		10.0	s^{-1}	☑

6.36 Reaction re73

This is a reversible reaction of one reactant forming one product influenced by one modifier.

Name D3-1

Reaction equation

$$s172 \overset{s173}{\rightleftharpoons} s135 \tag{73}$$

Reactant

Table 111: Properties of each reactant.

Id	Name	SBO
s172	Ca_super_2_plus__endsuper_ store	

Modifier

Table 112: Properties of each modifier.

Id	Name	SBO
s173	3IP3.IP3R	

Product

Table 113: Properties of each product.

Id	Name	SBO
s135	Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{36} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{g} \cdot [\mathrm{s173}] \cdot ([\mathrm{s172}] - [\mathrm{s135}]) \tag{74}$$

Table 114: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
g	g		150.0	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑

6.37 Reaction `re85`

This is an irreversible reaction of one reactant forming two products.

Name D1-2

Reaction equation

$$\mathrm{s444} \longrightarrow 2\,\mathrm{s172} + \mathrm{s430} \tag{75}$$

Reactant

Table 115: Properties of each reactant.

Id	Name	SBO
`s444`	2Ca_super_2_plus__endsuper_ .Ca_super_2_plus__endsuper_ trunsp	

Products

Table 116: Properties of each product.

Id	Name	SBO
`s172`	Ca_super_2_plus__endsuper_ store	
`s430`	Ca_super_2_plus__endsuper_ trunsp	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{37} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s444}] \tag{76}$$

Table 117: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		1.0	s^{-1}	☑

6.38 Reaction re86

This is a reversible reaction of two reactants forming one product.

Name D1-3

Reaction equation

$$s276 + s135 \rightleftharpoons s277 \tag{77}$$

Reactants

Table 118: Properties of each reactant.

Id	Name	SBO
s276	CaM	
s135	Ca_super_2_plus__endsuper_	

Product

Table 119: Properties of each product.

Id	Name	SBO
s277	Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{38} = \mathrm{vol}(c1) \cdot (kf \cdot [s276] \cdot [s135] - kb \cdot [s277]) \tag{78}$$

Table 120: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.0	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		50.0	s^{-1}	☑

6.39 Reaction re87

This is a reversible reaction of two reactants forming one product.

Name D1-4

Reaction equation

$$\mathrm{s277} + \mathrm{s135} \rightleftharpoons \mathrm{s278} \tag{79}$$

Reactants

Table 121: Properties of each reactant.

Id	Name	SBO
s277	Ca_super_2_plus__endsuper_.CaM	
s135	Ca_super_2_plus__endsuper_	

Product

Table 122: Properties of each product.

Id	Name	SBO
s278	2Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{39} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s277}] \cdot [\mathrm{s135}] - \mathrm{kb} \cdot [\mathrm{s278}]) \tag{80}$$

Table 123: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.0	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		45.0	s^{-1}	☑

6.40 Reaction re88

This is a reversible reaction of two reactants forming one product.

Name D1-6

Reaction equation

$$\mathrm{s279} + \mathrm{s135} \rightleftharpoons \mathrm{s280} \tag{81}$$

Reactants

Table 124: Properties of each reactant.

Id	Name	SBO
s279	3Ca_super_2_plus__endsuper_.CaM	
s135	Ca_super_2_plus__endsuper_	

Product

Table 125: Properties of each product.

Id	Name	SBO
s280	4Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{40} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s279}] \cdot [\mathrm{s135}] - \mathrm{kb} \cdot [\mathrm{s280}]) \tag{82}$$

Table 126: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.0	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		500.0	s^{-1}	☑

6.41 Reaction re89

This is a reversible reaction of two reactants forming one product.

Name D1-5

Reaction equation

$$\mathrm{s278} + \mathrm{s135} \rightleftharpoons \mathrm{s279} \tag{83}$$

Reactants

Table 127: Properties of each reactant.

Id	Name	SBO
s278	2Ca_super_2_plus__endsuper_.CaM	
s135	Ca_super_2_plus__endsuper_	

Product

Table 128: Properties of each product.

Id	Name	SBO
s279	3Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{41} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s278}] \cdot [\mathrm{s135}] - \mathrm{kb} \cdot [\mathrm{s279}]) \tag{84}$$

Table 129: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.0	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		170.0	s^{-1}	☑

6.42 Reaction re90

This is a reversible reaction of two reactants forming one product.

Name D1-10

Reaction equation

$$\mathrm{s280} + \mathrm{s289} \rightleftharpoons \mathrm{s295} \tag{85}$$

Reactants

Table 130: Properties of each reactant.

Id	Name	SBO
s280	4Ca_super_2_plus__endsuper_.CaM	
s289	MLCK	

Product

Table 131: Properties of each product.

Id	Name	SBO
s295	MLCK.4Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{42} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s280}] \cdot [\mathrm{s289}] - \mathrm{kb} \cdot [\mathrm{s295}]) \tag{86}$$

Table 132: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.00	$\mu\mathrm{mol}^{-1} \cdot \mathrm{l} \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.01	s^{-1}	☑

6.43 Reaction re91

This is a reversible reaction of two reactants forming one product.

Name D1-9

Reaction equation

$$\mathrm{s279} + \mathrm{s289} \rightleftharpoons \mathrm{s294} \tag{87}$$

Reactants

Table 133: Properties of each reactant.

Id	Name	SBO
s279	3Ca_super_2_plus__endsuper_.CaM	

Id	Name	SBO
s289	MLCK	

Product

Table 134: Properties of each product.

Id	Name	SBO
s294	MLCK.3Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{43} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s279}] \cdot [\mathrm{s289}] - \mathrm{kb} \cdot [\mathrm{s294}]) \tag{88}$$

Table 135: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		10.00	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.01	s^{-1}	☑

6.44 Reaction re92

This is a reversible reaction of two reactants forming one product.

Name D1-8

Reaction equation

$$\mathrm{s278} + \mathrm{s289} \rightleftharpoons \mathrm{s293} \tag{89}$$

Reactants

Table 136: Properties of each reactant.

Id	Name	SBO
s278	2Ca_super_2_plus__endsuper_.CaM	
s289	MLCK	

Product

Table 137: Properties of each product.

Id	Name	SBO
s293	MLCK.2Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{44} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s278}] \cdot [\mathrm{s289}] - \mathrm{kb} \cdot [\mathrm{s293}]) \tag{90}$$

Table 138: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.10	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.45	s^{-1}	☑

6.45 Reaction re93

This is a reversible reaction of two reactants forming one product.

Name D1-7

Reaction equation

$$\mathrm{s277} + \mathrm{s289} \rightleftharpoons \mathrm{s292} \tag{91}$$

Reactants

Table 139: Properties of each reactant.

Id	Name	SBO
s277	Ca_super_2_plus__endsuper_.CaM	
s289	MLCK	

Product

Table 140: Properties of each product.

Id	Name	SBO
s292	MLCK.Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{45} = \mathrm{vol}(c1) \cdot (kf \cdot [s277] \cdot [s289] - kb \cdot [s292]) \tag{92}$$

Table 141: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.1	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		0.5	s^{-1}	☑

6.46 Reaction re94

This is a reversible reaction of one reactant forming one product.

Name E1-1

Reaction equation

$$s309 \rightleftharpoons s310 \tag{93}$$

Reactant

Table 142: Properties of each reactant.

Id	Name	SBO
s309	PKC	

Product

Table 143: Properties of each product.

Id	Name	SBO
s310	PKC active1	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{46} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s309}] - \mathrm{kb} \cdot [\mathrm{s310}]) \tag{94}$$

Table 144: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		1.0	s^{-1}	☑
kb	kb		50.0	s^{-1}	☑

6.47 Reaction re95

This is a reversible reaction of two reactants forming one product.

Name E1-3

Reaction equation

$$\mathrm{s309} + \mathrm{s153} \rightleftharpoons \mathrm{s311} \tag{95}$$

Reactants

Table 145: Properties of each reactant.

Id	Name	SBO
s309	PKC	
s153	DAG	

Product

Table 146: Properties of each product.

Id	Name	SBO
s311	PKC.DAG	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{47} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s309}] \cdot [\mathrm{s153}] - \mathrm{kb} \cdot [\mathrm{s311}]) \tag{96}$$

Table 147: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		$3 \cdot 10^{-4}$	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		0.100	s^{-1}	☑

6.48 Reaction re96

This is a reversible reaction of one reactant forming one product.

Name E1-5

Reaction equation

$$s566 \rightleftharpoons s314 \tag{97}$$

Reactant

Table 148: Properties of each reactant.

Id	Name	SBO
s566	PKC.Ca_super_2_plus__endsuper_	

Product

Table 149: Properties of each product.

Id	Name	SBO
s314	PKC active_2	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{48} = vol(c1) \cdot (kf \cdot [s566] - kb \cdot [s314]) \tag{98}$$

Table 150: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		1.271	s^{-1}	☑
kb	kb		3.503	s^{-1}	☑

6.49 Reaction re97

This is a reversible reaction of two reactants forming one product.

Name E1-4

Reaction equation

$$\mathrm{s309} + \mathrm{s135} \rightleftharpoons \mathrm{s566} \tag{99}$$

Reactants

Table 151: Properties of each reactant.

Id	Name	SBO
s309	PKC	
s135	Ca_super_2_plus__endsuper_	

Product

Table 152: Properties of each product.

Id	Name	SBO
s566	PKC.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{49} = \mathrm{vol}\,(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s309}] \cdot [\mathrm{s135}] - \mathrm{kb} \cdot [\mathrm{s566}]) \tag{100}$$

Table 153: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.3	$\mu\mathrm{mol}^{-1} \cdot 1 \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.5	s^{-1}	☑

6.50 Reaction re98

This is an irreversible reaction of one reactant forming two products.

Name D2-1.2

Reaction equation

$$\text{s446} \longrightarrow \text{s432} + \text{s267} \tag{101}$$

Reactant

Table 154: Properties of each reactant.

Id	Name	SBO
s446	Ca_super_2_plus__endsuper_ pump.Ca_super_2_plus__endsuper_	

Products

Table 155: Properties of each product.

Id	Name	SBO
s432	Ca_super_2_plus__endsuper_ pump	
s267	Ca_super_2_plus__endsuper_ ext	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{50} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s446}] \tag{102}$$

Table 156: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		4.9	s^{-1}	☑

6.51 Reaction re100

This is a reversible reaction of two reactants forming one product.

Name D1-1

Reaction equation

$$\text{s430} + 2\,\text{s135} \rightleftharpoons \text{s444} \tag{103}$$

Reactants

Table 157: Properties of each reactant.

Id	Name	SBO
s430	Ca_super_2_plus__endsuper_ trunsp	
s135	Ca_super_2_plus__endsuper_	

Product

Table 158: Properties of each product.

Id	Name	SBO
s444	2Ca_super_2_plus__endsuper_ .Ca_super_2_plus__endsuper_ trunsp	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{51} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s135}] \cdot [\mathrm{s135}] \cdot [\mathrm{s430}] - \mathrm{kb} \cdot [\mathrm{s444}]) \tag{104}$$

Table 159: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		30.0	$\mu\mathrm{mol}^{-2} \cdot \mathrm{l}^2 \cdot \mathrm{s}^{-1}$	☑
kb	kb		3.0	s^{-1}	☑

6.52 Reaction re101

This is a reversible reaction of two reactants forming one product.

Name E1-7

Reaction equation

$$\mathrm{s566} + \mathrm{s153} \rightleftharpoons \mathrm{s565} \tag{105}$$

Reactants

Table 160: Properties of each reactant.

Id	Name	SBO
s566	PKC.Ca_super_2_plus__endsuper_	

Id	Name	SBO
s153	DAG	

Product

Table 161: Properties of each product.

Id	Name	SBO
s565	PKC.Ca_super_2_plus__endsuper_.DAG	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{52} = \mathrm{vol}(c1) \cdot (kf \cdot [s566] \cdot [s153] - kb \cdot [s565]) \tag{106}$$

Table 162: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.004	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑
kb	kb		8.635	s^{-1}	☑

6.53 Reaction re102

This is a reversible reaction of one reactant forming one product.

Name E1-8

Reaction equation

$$s565 \rightleftharpoons s324 \tag{107}$$

Reactant

Table 163: Properties of each reactant.

Id	Name	SBO
s565	PKC.Ca_super_2_plus__endsuper_.DAG	

Product

Table 164: Properties of each product.

Id	Name	SBO
s324	PKC active_3	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{53} = \mathrm{vol}(c1) \cdot (kf \cdot [s565] - kb \cdot [s324]) \tag{108}$$

Table 165: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		1.0	s^{-1}	☑
kb	kb		0.1	s^{-1}	☑

6.54 Reaction re106

This is an irreversible reaction of one reactant forming one product.

Name E1-9

Reaction equation

$$s324 \longrightarrow s329 \tag{109}$$

Reactant

Table 166: Properties of each reactant.

Id	Name	SBO
s324	PKC active_3	

Product

Table 167: Properties of each product.

Id	Name	SBO
s329	csa39_degraded	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{54} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s324}] \tag{110}$$

Table 168: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		$4.63 \cdot 10^{-5}$	s^{-1}	☑

6.55 Reaction re107

This is an irreversible reaction of one reactant forming one product.

Name E1-6

Reaction equation

$$\mathrm{s314} \longrightarrow \mathrm{s330} \tag{111}$$

Reactant

Table 169: Properties of each reactant.

Id	Name	SBO
s314	PKC active_2	

Product

Table 170: Properties of each product.

Id	Name	SBO
s330	csa36_degraded	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{55} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s314}] \tag{112}$$

Table 171: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		$4.63 \cdot 10^{-5}$	s^{-1}	☑

6.56 Reaction re108

This is an irreversible reaction of one reactant forming one product.

Name E1-2

Reaction equation

$$s310 \longrightarrow s331 \tag{113}$$

Reactant

Table 172: Properties of each reactant.

Id	Name	SBO
s310	PKC active1	

Product

Table 173: Properties of each product.

Id	Name	SBO
s331	csa35_degraded	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{56} = \mathrm{vol}(c1) \cdot kf \cdot [s310] \tag{114}$$

Table 174: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		$4.63 \cdot 10^{-5}$	s^{-1}	☑

6.57 Reaction re109

This is a reversible reaction of two reactants forming one product.

Name D2-1.1

Reaction equation

$$\mathrm{s432} + \mathrm{s135} \rightleftharpoons \mathrm{s446} \tag{115}$$

Reactants

Table 175: Properties of each reactant.

Id	Name	SBO
s432	Ca_super_2_plus__endsuper_ pump	
s135	Ca_super_2_plus__endsuper_	

Product

Table 176: Properties of each product.

Id	Name	SBO
s446	Ca_super_2_plus__endsuper_ pump.Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit contains undeclared units

$$v_{57} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s432}] \cdot [\mathrm{s135}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s446}] \right) \tag{116}$$

Table 177: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.04	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.00	dimensionless	☑
Vmax	Vmax		4.90	s^{-1}	☑

6.58 Reaction re110

This is a reversible reaction of two reactants forming one product.

Name E2-1.1.3

Reaction equation

$$\mathrm{s324} + \mathrm{s349} \rightleftharpoons \mathrm{s338} \tag{117}$$

Reactants

Table 178: Properties of each reactant.

Id	Name	SBO
s324	PKC active_3	
s349	CPI-17	

Product

Table 179: Properties of each product.

Id	Name	SBO
s338	PKC active_3.CPI	

Kinetic Law

Derived unit contains undeclared units

$$v_{58} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s324}] \cdot [\mathrm{s349}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s338}] \right) \tag{118}$$

Table 180: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.001	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.000	dimensionless	☑
Vmax	Vmax		3.940	s^{-1}	☑

6.59 Reaction re111

This is a reversible reaction of two reactants forming one product.

Name E2-1.1.2

Reaction equation

$$\mathrm{s314} + \mathrm{s349} \rightleftharpoons \mathrm{s335} \tag{119}$$

Reactants

Table 181: Properties of each reactant.

Id	Name	SBO
s314	PKC active_2	
s349	CPI-17	

Product

Table 182: Properties of each product.

Id	Name	SBO
s335	PKC active_2.CPI	

Kinetic Law

Derived unit contains undeclared units

$$v_{59} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s314}] \cdot [\mathrm{s349}]}{\mathrm{Km}} - \mathrm{ratio} \cdot \mathrm{Vmax} \cdot [\mathrm{s335}] \right) \tag{120}$$

Table 183: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.001	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.000	dimensionless	☑
Vmax	Vmax		3.940	s^{-1}	☑

6.60 Reaction re112

This is a reversible reaction of two reactants forming one product.

Name E2-1.1.1

Reaction equation

$$\mathrm{s310} + \mathrm{s349} \rightleftharpoons \mathrm{s332} \tag{121}$$

Reactants

Table 184: Properties of each reactant.

Id	Name	SBO
s310	PKC active1	
s349	CPI-17	

Product

Table 185: Properties of each product.

Id	Name	SBO
s332	PKC active_1.CPI	

Kinetic Law

Derived unit contains undeclared units

$$v_{60} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s310}] \cdot [\mathrm{s349}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s332}] \right) \tag{122}$$

Table 186: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.001	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		4.000	dimensionless	☑
Vmax	Vmax		3.940	s^{-1}	☑

6.61 Reaction re113

This is an irreversible reaction of one reactant forming two products.

Name E2-1.2.3

Reaction equation

$$\text{s338} \longrightarrow \text{s324} + \text{s350} \tag{123}$$

Reactant

Table 187: Properties of each reactant.

Id	Name	SBO
s338	PKC active_3.CPI	

Products

Table 188: Properties of each product.

Id	Name	SBO
s324	PKC active_3	
s350	CPI-17	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{61} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s338}] \tag{124}$$

Table 189: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.94	s^{-1}	☑

6.62 Reaction re114

This is an irreversible reaction of one reactant forming two products.

Name E2-1.2.2

Reaction equation

$$\text{s335} \longrightarrow \text{s314} + \text{s350} \tag{125}$$

Reactant

Table 190: Properties of each reactant.

Id	Name	SBO
s335	PKC active_2.CPI	

Products

Table 191: Properties of each product.

Id	Name	SBO
s314	PKC active_2	
s350	CPI-17	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{62} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s335}] \tag{126}$$

Table 192: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.94	s^{-1}	☑

6.63 Reaction re115

This is an irreversible reaction of one reactant forming two products.

Name E2-1.2.1

Reaction equation

$$\text{s332} \longrightarrow \text{s310} + \text{s350} \tag{127}$$

Reactant

Table 193: Properties of each reactant.

Id	Name	SBO
s332	PKC active_1.CPI	

Products

Table 194: Properties of each product.

Id	Name	SBO
s310	PKC active1	
s350	CPI-17	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{63} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s332] \tag{128}$$

Table 195: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.94	s^{-1}	☑

6.64 Reaction re116

This is an irreversible reaction of one reactant forming one product.

Name E1-10

Reaction equation

$$s350 \longrightarrow s349 \tag{129}$$

Reactant

Table 196: Properties of each reactant.

Id	Name	SBO
s350	CPI-17	

Product

Table 197: Properties of each product.

Id	Name	SBO
s349	CPI-17	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{64} = \mathrm{vol}(c1) \cdot kf \cdot [s350] \tag{130}$$

Table 198: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.5	s^{-1}	☑

6.65 Reaction re117

This is a reversible reaction of two reactants forming one product.

Name E1-11

Reaction equation

$$s351 + s350 \rightleftharpoons s352 \tag{131}$$

Reactants

Table 199: Properties of each reactant.

Id	Name	SBO
s351	MYPT1_PPase	
s350	CPI-17	

Product

Table 200: Properties of each product.

Id	Name	SBO
s352	CPI-17.MYPT1_PPase	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{65} = \mathrm{vol}(c1) \cdot (kf \cdot [s351] \cdot [s350] - kb \cdot [s352]) \tag{132}$$

Table 201: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		100.00	$\mu mol^{-1} \cdot 1 \cdot s^{-1}$	☑
kb	kb		0.62	s^{-1}	☑

6.66 Reaction re118

This is a reversible reaction of two reactants forming one product.

Name E1-12

Reaction equation

$$s351 + s349 \rightleftharpoons s355 \tag{133}$$

Reactants

Table 202: Properties of each reactant.

Id	Name	SBO
s351	MYPT1_PPase	
s349	CPI-17	

Product

Table 203: Properties of each product.

Id	Name	SBO
s355	CPI-17.MYPT1_PPase	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{66} = \mathrm{vol}(\mathrm{c1}) \cdot (\mathrm{kf} \cdot [\mathrm{s351}] \cdot [\mathrm{s349}] - \mathrm{kb} \cdot [\mathrm{s355}]) \tag{134}$$

Table 204: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.01	$\mu\mathrm{mol}^{-1} \cdot \mathrm{l} \cdot \mathrm{s}^{-1}$	☑
kb	kb		0.10	s^{-1}	☑

6.67 Reaction re119

This is an irreversible reaction of one reactant forming one product.

Name E1-13

Reaction equation

$$\mathrm{s352} \longrightarrow \mathrm{s355} \tag{135}$$

Reactant

Table 205: Properties of each reactant.

Id	Name	SBO
s352	CPI-17.MYPT1_PPase	

Product

Table 206: Properties of each product.

Id	Name	SBO
s355	CPI-17.MYPT1_PPase	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{67} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{kf} \cdot [\mathrm{s352}] \tag{136}$$

Table 207: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.5	s^{-1}	☑

6.68 Reaction re120

This is a reversible reaction of two reactants forming one product.

Name F2-1.1

Reaction equation

$$s124 + s358 \rightleftharpoons s361 \tag{137}$$

Reactants

Table 208: Properties of each reactant.

Id	Name	SBO
s124	Rho-kinase	
s358	MLC	

Product

Table 209: Properties of each product.

Id	Name	SBO
s361	Rho-kinase.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{68} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s124] \cdot [s358]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s361] \right) \tag{138}$$

Table 210: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		4.510	$\mu mol \cdot l^{-1}$	☑

Id	Name	SBO	Value	Unit	Constant
ratio	ratio		16.617	dimensionless	☑
Vmax	Vmax		1.280	s^{-1}	☑

6.69 Reaction re121

This is a reversible reaction of two reactants forming one product.

Name F2-2.1

Reaction equation

$$s124 + s359 \rightleftharpoons s362 \tag{139}$$

Reactants

Table 211: Properties of each reactant.

Id	Name	SBO
s124	Rho-kinase	
s359	MLC	

Product

Table 212: Properties of each product.

Id	Name	SBO
s362	Rho-kinase.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{69} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s124] \cdot [s359]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s362] \right) \tag{140}$$

Table 213: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		4.510	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		16.617	dimensionless	☑
Vmax	Vmax		1.280	s^{-1}	☑

6.70 Reaction re123

This is an irreversible reaction of one reactant forming two products.

Name F2-1.2

Reaction equation

$$\mathrm{s361} \longrightarrow \mathrm{s359} + \mathrm{s124} \tag{141}$$

Reactant

Table 214: Properties of each reactant.

Id	Name	SBO
s361	Rho-kinase.MLC	

Products

Table 215: Properties of each product.

Id	Name	SBO
s359	MLC	
s124	Rho-kinase	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{70} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s361}] \tag{142}$$

Table 216: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		1.28	s^{-1}	☑

6.71 Reaction re124

This is an irreversible reaction of one reactant forming two products.

Name F2-2.2

Reaction equation

$$\text{s362} \longrightarrow \text{s360} + \text{s124} \tag{143}$$

Reactant

Table 217: Properties of each reactant.

Id	Name	SBO
s362	Rho-kinase.MLC	

Products

Table 218: Properties of each product.

Id	Name	SBO
s360	MLC	
s124	Rho-kinase	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{71} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s362}] \tag{144}$$

Table 219: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		1.28	s^{-1}	☑

6.72 Reaction re125

This is a reversible reaction of two reactants forming one product.

Name F2-3.1

Reaction equation

$$\text{s252} + \text{s358} \rightleftharpoons \text{s456} \tag{145}$$

Reactants

Table 220: Properties of each reactant.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	
s358	MLC	

Product

Table 221: Properties of each product.

Id	Name	SBO
s456	Rho.GTP.Rho-kinase.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{72} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s252}] \cdot [\mathrm{s358}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s456}] \right) \quad (146)$$

Table 222: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		2.470	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		0.426	dimensionless	☑
Vmax	Vmax		8.660	s^{-1}	☑

6.73 Reaction re126

This is an irreversible reaction of two reactants forming one product.

Name F2-4.1

Reaction equation

$$\mathrm{s252} + \mathrm{s359} \longrightarrow \mathrm{s449} \quad (147)$$

Reactants

Table 223: Properties of each reactant.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	
s359	MLC	

Product

Table 224: Properties of each product.

Id	Name	SBO
s449	Rho.GTP.Rho-kinase.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{73} = \mathrm{vol}(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s252}] \cdot [\mathrm{s359}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s449}] \right) \quad (148)$$

Table 225: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		2.470	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		0.426	dimensionless	☑
Vmax	Vmax		8.660	s^{-1}	☑

6.74 Reaction re127

This is an irreversible reaction of one reactant forming two products.

Name F2-3.2

Reaction equation

$$\mathrm{s456} \longrightarrow \mathrm{s252} + \mathrm{s359} \quad (149)$$

Reactant

Table 226: Properties of each reactant.

Id	Name	SBO
s456	Rho.GTP.Rho-kinase.MLC	

Products

Table 227: Properties of each product.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	
s359	MLC	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{74} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s456}] \tag{150}$$

Table 228: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		8.66	s^{-1}	☑

6.75 Reaction re128

This is an irreversible reaction of one reactant forming two products.

Name F2-4.2

Reaction equation

$$\mathrm{s449} \longrightarrow \mathrm{s252} + \mathrm{s360} \tag{151}$$

Reactant

Table 229: Properties of each reactant.

Id	Name	SBO
s449	Rho.GTP.Rho-kinase.MLC	

Products

Table 230: Properties of each product.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	
s360	MLC	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{75} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s449] \tag{152}$$

Table 231: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		8.66	s^{-1}	☑

6.76 Reaction re129

This is a reversible reaction of two reactants forming one product.

Name F2-14.1

Reaction equation

$$s124 + s351 \rightleftharpoons s463 \tag{153}$$

Reactants

Table 232: Properties of each reactant.

Id	Name	SBO
s124	Rho-kinase	
s351	MYPT1_PPase	

Product

Table 233: Properties of each product.

Id	Name	SBO
s463	MYPT1.Rho-kinase	

Kinetic Law

Derived unit contains undeclared units

$$v_{76} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s124}] \cdot [\mathrm{s351}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s463}] \right) \quad (154)$$

Table 234: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.180	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		0.233	dimensionless	☑
Vmax	Vmax		1.460	s^{-1}	☑

6.77 Reaction re130

This is an irreversible reaction of one reactant forming two products.

Name F2-14.2

Reaction equation

$$\mathrm{s463} \longrightarrow \mathrm{s124} + \mathrm{s570} \quad (155)$$

Reactant

Table 235: Properties of each reactant.

Id	Name	SBO
s463	MYPT1.Rho-kinase	

Products

Table 236: Properties of each product.

Id	Name	SBO
s124	Rho-kinase	
s570	MYPT1_PPase	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{77} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s463] \tag{156}$$

Table 237: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		1.46	s^{-1}	☑

6.78 Reaction re131

This is a reversible reaction of two reactants forming one product.

Name F2-13.1

Reaction equation

$$s252 + s351 \rightleftharpoons s496 \tag{157}$$

Reactants

Table 238: Properties of each reactant.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	
s351	MYPT1_PPase	

Product

Table 239: Properties of each product.

Id	Name	SBO
s496	MYPT1.Rho-kinase	

Kinetic Law

Derived unit contains undeclared units

$$v_{78} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s252}] \cdot [\mathrm{s351}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s496}] \right) \quad (158)$$

Table 240: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		0.100	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		0.028	dimensionless	☑
Vmax	Vmax		17.505	s^{-1}	☑

6.79 Reaction re132

This is an irreversible reaction of one reactant forming two products.

Name F2-13.2

Reaction equation

$$\mathrm{s496} \longrightarrow \mathrm{s252} + \mathrm{s570} \quad (159)$$

Reactant

Table 241: Properties of each reactant.

Id	Name	SBO
s496	MYPT1.Rho-kinase	

Products

Table 242: Properties of each product.

Id	Name	SBO
s252	Rho.GTP.Rho-kinase	
s570	MYPT1_PPase	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{79} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s496}] \tag{160}$$

Table 243: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		17.505	s^{-1}	☑

6.80 Reaction re133

This is a reversible reaction of two reactants forming one product.

Name F2-11.1

Reaction equation

$$\mathrm{s360} + \mathrm{s570} \rightleftharpoons \mathrm{s467} \tag{161}$$

Reactants

Table 244: Properties of each reactant.

Id	Name	SBO
s360	MLC	
s570	MYPT1_PPase	

Product

Table 245: Properties of each product.

Id	Name	SBO
s467	MYPT1.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{80} = \mathrm{vol}(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s360}] \cdot [\mathrm{s570}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s467}] \right) \tag{162}$$

Table 246: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		58.099	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		28.795	dimensionless	☑
Vmax	Vmax		1.950	s^{-1}	☑

6.81 Reaction re134

This is a reversible reaction of two reactants forming one product.

Name F2-9.1

Reaction equation

$$s360 + s351 \rightleftharpoons s470 \tag{163}$$

Reactants

Table 247: Properties of each reactant.

Id	Name	SBO
s360	MLC	
s351	MYPT1_PPase	

Product

Table 248: Properties of each product.

Id	Name	SBO
s470	MYPT1.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{81} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s360] \cdot [s351]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s470] \right) \tag{164}$$

Table 249: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		16.000	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		7.587	dimensionless	☑
Vmax	Vmax		9.317	s^{-1}	☑

6.82 Reaction re135

This is a reversible reaction of two reactants forming one product.

Name F2-12.1

Reaction equation

$$s359 + s570 \rightleftharpoons s477 \tag{165}$$

Reactants

Table 250: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s570	MYPT1_PPase	

Product

Table 251: Properties of each product.

Id	Name	SBO
s477	MYPT1.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{82} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s359] \cdot [s570]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s477] \right) \tag{166}$$

Table 252: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		58.099	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		28.795	dimensionless	☑
Vmax	Vmax		1.950	s^{-1}	☑

6.83 Reaction re136

This is a reversible reaction of two reactants forming one product.

Name F2-10.1

Reaction equation

$$s359 + s351 \rightleftharpoons s480 \tag{167}$$

Reactants

Table 253: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s351	MYPT1_PPase	

Product

Table 254: Properties of each product.

Id	Name	SBO
s480	MYPT1.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{83} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s351] \cdot [s359]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s480] \right) \tag{168}$$

Table 255: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		16.000	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		7.587	dimensionless	☑
Vmax	Vmax		9.317	s^{-1}	☑

6.84 Reaction re137

This is an irreversible reaction of one reactant forming two products.

Name F2-11.2

Reaction equation

$$s467 \longrightarrow s359 + s570 \tag{169}$$

Reactant

Table 256: Properties of each reactant.

Id	Name	SBO
s467	MYPT1.MLC	

Products

Table 257: Properties of each product.

Id	Name	SBO
s359	MLC	
s570	MYPT1_PPase	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{84} = vol(c1) \cdot Vmax \cdot [s467] \tag{170}$$

Table 258: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		1.95	s^{-1}	☑

6.85 Reaction re138

This is an irreversible reaction of one reactant forming two products.

Name F2-9.2

Reaction equation

$$s470 \longrightarrow s359 + s351 \tag{171}$$

Reactant

Table 259: Properties of each reactant.

Id	Name	SBO
s470	MYPT1.MLC	

Products

Table 260: Properties of each product.

Id	Name	SBO
s359	MLC	
s351	MYPT1_PPase	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{85} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s470] \tag{172}$$

Table 261: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		9.317	s^{-1}	☑

6.86 Reaction re139

This is an irreversible reaction of one reactant forming two products.

Name F2-12.2

Reaction equation

$$\text{s477} \longrightarrow \text{s358} + \text{s570} \tag{173}$$

Reactant

Table 262: Properties of each reactant.

Id	Name	SBO
s477	MYPT1.MLC	

Products

Table 263: Properties of each product.

Id	Name	SBO
s358	MLC	
s570	MYPT1_PPase	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{86} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s477}] \tag{174}$$

Table 264: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		1.95	s^{-1}	☑

6.87 Reaction re140

This is an irreversible reaction of one reactant forming two products.

Name F2-10.2

Reaction equation

$$\text{s480} \longrightarrow \text{s358} + \text{s351} \tag{175}$$

Reactant

Table 265: Properties of each reactant.

Id	Name	SBO
s480	MYPT1.MLC	

Products

Table 266: Properties of each product.

Id	Name	SBO
s358	MLC	
s351	MYPT1_PPase	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{87} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s480}] \tag{176}$$

Table 267: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		9.317	s^{-1}	☑

6.88 Reaction re141

This is an irreversible reaction of one reactant forming one product.

Name F1-1

Reaction equation

$$\text{s570} \longrightarrow \text{s351} \tag{177}$$

Reactant

Table 268: Properties of each reactant.

Id	Name	SBO
s570	MYPT1_PPase	

Product

Table 269: Properties of each product.

Id	Name	SBO
s351	MYPT1_PPase	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{88} = \mathrm{vol}(c1) \cdot kf \cdot [s570] \tag{178}$$

Table 270: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
kf	kf		0.2	s^{-1}	☑

6.89 Reaction re154

This is a reversible reaction of two reactants forming one product.

Name F2-7.1

Reaction equation

$$s358 + s289 \rightleftharpoons s487 \tag{179}$$

Reactants

Table 271: Properties of each reactant.

Id	Name	SBO
s358	MLC	
s289	MLCK	

Product

Table 272: Properties of each product.

Id	Name	SBO
s487	MLCK.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{89} = \mathrm{vol}(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s289}] \cdot [\mathrm{s358}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s487}] \right) \quad (180)$$

Table 273: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		148.080	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		39.349	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.90 Reaction re155

This is a reversible reaction of two reactants forming one product.

Name F2-8.1

Reaction equation

$$\mathrm{s359} + \mathrm{s289} \rightleftharpoons \mathrm{s491} \quad (181)$$

Reactants

Table 274: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s289	MLCK	

Product

Table 275: Properties of each product.

Id	Name	SBO
s491	MLCK.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{90} = \mathrm{vol}\,(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s289}] \cdot [\mathrm{s359}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s491}] \right) \quad (182)$$

Table 276: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		148.080	$\mu\mathrm{mol} \cdot \mathrm{l}^{-1}$	☑
ratio	ratio		39.349	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.91 Reaction re156

This is an irreversible reaction of one reactant forming two products.

Name F2-7.2

Reaction equation

$$\mathrm{s487} \longrightarrow \mathrm{s359} + \mathrm{s289} \quad (183)$$

Reactant

Table 277: Properties of each reactant.

Id	Name	SBO
s487	MLCK.MLC	

Products

Table 278: Properties of each product.

Id	Name	SBO
s359	MLC	
s289	MLCK	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{91} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s487] \tag{184}$$

Table 279: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.92 Reaction re157

This is an irreversible reaction of one reactant forming two products.

Name F2-8.2

Reaction equation

$$s491 \longrightarrow s360 + s289 \tag{185}$$

Reactant

Table 280: Properties of each reactant.

Id	Name	SBO
s491	MLCK.MLC	

Products

Table 281: Properties of each product.

Id	Name	SBO
s360	MLC	
s289	MLCK	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{92} = \mathrm{vol}(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s491}] \tag{186}$$

Table 282: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.93 Reaction re158

This is a reversible reaction of two reactants forming one product.

Name F2-5.1.1

Reaction equation

$$\mathrm{s358} + \mathrm{s292} \rightleftharpoons \mathrm{s551} \tag{187}$$

Reactants

Table 283: Properties of each reactant.

Id	Name	SBO
s358	MLC	
s292	MLCK.Ca_super_2_plus__endsuper_.CaM	

Product

Table 284: Properties of each product.

Id	Name	SBO
s551	MLCK.Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{93} = \mathrm{vol}(\mathrm{c1}) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [\mathrm{s292}] \cdot [\mathrm{s358}]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [\mathrm{s551}] \right) \tag{188}$$

Table 285: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.94 Reaction re159

This is a reversible reaction of two reactants forming one product.

Name F2-5.2.1

Reaction equation

$$s358 + s293 \rightleftharpoons s539 \tag{189}$$

Reactants

Table 286: Properties of each reactant.

Id	Name	SBO
s358	MLC	
s293	MLCK.2Ca_super_2_plus__endsuper_.CaM	

Product

Table 287: Properties of each product.

Id	Name	SBO
s539	MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{94} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s293] \cdot [s358]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s539] \right) \tag{190}$$

Table 288: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.95 Reaction re160

This is a reversible reaction of two reactants forming one product.

Name F2-5.3.1

Reaction equation

$$s358 + s294 \rightleftharpoons s520 \tag{191}$$

Reactants

Table 289: Properties of each reactant.

Id	Name	SBO
s358	MLC	
s294	MLCK.3Ca_super_2_plus__endsuper_.CaM	

Product

Table 290: Properties of each product.

Id	Name	SBO
s520	MLCK.3Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{95} = \mathrm{vol}\,(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s294] \cdot [s358]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s520] \right) \tag{192}$$

Table 291: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.96 Reaction re161

This is a reversible reaction of two reactants forming one product.

Name F2-5.4.1

Reaction equation

$$s358 + s295 \rightleftharpoons s513 \tag{193}$$

Reactants

Table 292: Properties of each reactant.

Id	Name	SBO
s358	MLC	
s295	MLCK.4Ca_super_2_plus__endsuper_.CaM	

Product

Table 293: Properties of each product.

Id	Name	SBO
s513	MLCK.4Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{96} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s295] \cdot [s358]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s513] \right) \tag{194}$$

Table 294: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.97 Reaction re162

This is a reversible reaction of two reactants forming one product.

Name F2-6.1.1

Reaction equation

$$s359 + s292 \rightleftharpoons s546 \tag{195}$$

Reactants

Table 295: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s292	MLCK.Ca_super_2_plus__endsuper_.CaM	

Product

Table 296: Properties of each product.

Id	Name	SBO
s546	MLCK.Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{97} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s292] \cdot [s359]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s546] \right) \tag{196}$$

Table 297: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.98 Reaction re163

This is a reversible reaction of two reactants forming one product.

Name F2-6.2.1

Reaction equation

$$s359 + s293 \rightleftharpoons s526 \tag{197}$$

Reactants

Table 298: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s293	MLCK.2Ca_super_2_plus__endsuper_.CaM	

Product

Table 299: Properties of each product.

Id	Name	SBO
s526	MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{98} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s293] \cdot [s359]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s526] \right) \tag{198}$$

Table 300: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.99 Reaction re164

This is a reversible reaction of two reactants forming one product.

Name F2-6.3.1

Reaction equation

$$s359 + s294 \rightleftharpoons s512 \tag{199}$$

Reactants

Table 301: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s294	MLCK.3Ca_super_2_plus__endsuper_.CaM	

Product

Table 302: Properties of each product.

Id	Name	SBO
s512	MLCK.3Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{99} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s294] \cdot [s359]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s512] \right) \tag{200}$$

Table 303: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.100 Reaction re165

This is a reversible reaction of two reactants forming one product.

Name F2-6.4.1

Reaction equation

$$s359 + s295 \rightleftharpoons s506 \tag{201}$$

Reactants

Table 304: Properties of each reactant.

Id	Name	SBO
s359	MLC	
s295	MLCK.4Ca_super_2_plus__endsuper_.CaM	

Product

Table 305: Properties of each product.

Id	Name	SBO
s506	MLCK.4Ca_super_2_plus__endsuper_.CaM.MLC	

Kinetic Law

Derived unit contains undeclared units

$$v_{100} = \mathrm{vol}(c1) \cdot \left(\frac{(1 + \mathrm{ratio}) \cdot \mathrm{Vmax} \cdot [s295] \cdot [s359]}{\mathrm{Km}} - \mathrm{Vmax} \cdot \mathrm{ratio} \cdot [s506] \right) \tag{202}$$

Table 306: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Km	Km		10.019	$\mu mol \cdot l^{-1}$	☑
ratio	ratio		1.730	dimensionless	☑
Vmax	Vmax		3.670	s^{-1}	☑

6.101 Reaction re166

This is an irreversible reaction of one reactant forming two products.

Name F2-6.4.2

Reaction equation

$$s506 \longrightarrow s360 + s295 \tag{203}$$

Reactant

Table 307: Properties of each reactant.

Id	Name	SBO
s506	MLCK.4Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 308: Properties of each product.

Id	Name	SBO
s360	MLC	
s295	MLCK.4Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{101} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s506] \tag{204}$$

Table 309: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.102 Reaction re167

This is an irreversible reaction of one reactant forming two products.

Name F2-5.4.2

Reaction equation

$$s513 \longrightarrow s359 + s295 \tag{205}$$

Reactant

Table 310: Properties of each reactant.

Id	Name	SBO
s513	MLCK.4Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 311: Properties of each product.

Id	Name	SBO
s359	MLC	
s295	MLCK.4Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{102} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s513] \tag{206}$$

Table 312: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.103 Reaction re168

This is an irreversible reaction of one reactant forming two products.

Name F2-6.3.2

Reaction equation

$$\text{s512} \longrightarrow \text{s360} + \text{s294} \tag{207}$$

Reactant

Table 313: Properties of each reactant.

Id	Name	SBO
s512	MLCK.3Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 314: Properties of each product.

Id	Name	SBO
s360	MLC	
s294	MLCK.3Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{103} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s512}] \tag{208}$$

Table 315: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.104 Reaction re169

This is an irreversible reaction of one reactant forming two products.

Name F2-5.3.2

Reaction equation

$$\text{s520} \longrightarrow \text{s359} + \text{s294} \tag{209}$$

Reactant

Table 316: Properties of each reactant.

Id	Name	SBO
s520	MLCK.3Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 317: Properties of each product.

Id	Name	SBO
s359	MLC	
s294	MLCK.3Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\text{s}^{-1} \cdot \mu\text{mol}$

$$v_{104} = \text{vol}\,(\text{c1}) \cdot \text{Vmax} \cdot [\text{s520}] \tag{210}$$

Table 318: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.105 Reaction re170

This is an irreversible reaction of one reactant forming two products.

Name F2-6.2.2

Reaction equation

$$\text{s526} \longrightarrow \text{s360} + \text{s293} \tag{211}$$

Reactant

Table 319: Properties of each reactant.

Id	Name	SBO
s526	MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 320: Properties of each product.

Id	Name	SBO
s360	MLC	
s293	MLCK.2Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{105} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s526}] \tag{212}$$

Table 321: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.106 Reaction re171

This is an irreversible reaction of one reactant forming two products.

Name F2-5.2.2

Reaction equation

$$\mathrm{s539} \longrightarrow \mathrm{s359} + \mathrm{s293} \tag{213}$$

Reactant

Table 322: Properties of each reactant.

Id	Name	SBO
s539	MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 323: Properties of each product.

Id	Name	SBO
s359	MLC	
s293	MLCK.2Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{106} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s539}] \tag{214}$$

Table 324: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.107 Reaction re172

This is an irreversible reaction of one reactant forming two products.

Name F2-6.1.2

Reaction equation

$$\mathrm{s546} \longrightarrow \mathrm{s360} + \mathrm{s292} \tag{215}$$

Reactant

Table 325: Properties of each reactant.

Id	Name	SBO
s546	MLCK.Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 326: Properties of each product.

Id	Name	SBO
s360	MLC	
s292	MLCK.Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{107} = \mathrm{vol}(c1) \cdot \mathrm{Vmax} \cdot [s546] \tag{216}$$

Table 327: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.108 Reaction re173

This is an irreversible reaction of one reactant forming two products.

Name F2-5.1.2

Reaction equation

$$s551 \longrightarrow s359 + s292 \tag{217}$$

Reactant

Table 328: Properties of each reactant.

Id	Name	SBO
s551	MLCK.Ca_super_2_plus__endsuper_.CaM.MLC	

Products

Table 329: Properties of each product.

Id	Name	SBO
s359	MLC	
s292	MLCK.Ca_super_2_plus__endsuper_.CaM	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{108} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{Vmax} \cdot [\mathrm{s551}] \tag{218}$$

Table 330: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
Vmax	Vmax		3.67	s^{-1}	☑

6.109 Reaction re174

This is a reversible reaction of one reactant forming one product influenced by one modifier.

Name D3-3

Reaction equation

$$\mathrm{s267} \overset{\mathrm{s556}}{\rightleftharpoons} \mathrm{s135} \tag{219}$$

Reactant

Table 331: Properties of each reactant.

Id	Name	SBO
s267	Ca_super_2_plus__endsuper_ ext	

Modifier

Table 332: Properties of each modifier.

Id	Name	SBO
s556	Ca_super_2_plus__endsuper_ ext leak	

Product

Table 333: Properties of each product.

Id	Name	SBO
s135	Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $s^{-1} \cdot \mu mol$

$$v_{109} = \mathrm{vol}(c1) \cdot g \cdot [s556] \cdot ([s267] - [s135]) \tag{220}$$

Table 334: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
g	g		0.01	$\mu mol^{-1} \cdot l \cdot s^{-1}$	☑

6.110 Reaction re175

This is a reversible reaction of one reactant forming one product influenced by one modifier.

Name D3-2

Reaction equation

$$s172 \overset{s557}{\rightleftharpoons} s135 \tag{221}$$

Reactant

Table 335: Properties of each reactant.

Id	Name	SBO
s172	Ca_super_2_plus__endsuper_ store	

Modifier

Table 336: Properties of each modifier.

Id	Name	SBO
s557	Ca_super_2_plus__endsuper_ int leak	

Product

Table 337: Properties of each product.

Id	Name	SBO
s135	Ca_super_2_plus__endsuper_	

Kinetic Law

Derived unit $\mathrm{s}^{-1} \cdot \mu\mathrm{mol}$

$$v_{110} = \mathrm{vol}\,(\mathrm{c1}) \cdot \mathrm{g} \cdot [\mathrm{s557}] \cdot ([\mathrm{s172}] - [\mathrm{s135}]) \tag{222}$$

Table 338: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
g	g		0.01	$\mu\mathrm{mol}^{-1} \cdot \mathrm{l} \cdot \mathrm{s}^{-1}$	☑

7 Derived Rate Equations

When interpreted as an ordinary differential equation framework, this model implies the following set of equations for the rates of change of each species.

7.1 Species s2

Name thrombin

Initial concentration $0\ \mu\mathrm{mol} \cdot \mathrm{l}^{-1}$

Charge 0

Involved in event event_0000001

This species takes part in two reactions (as a reactant in re1 and as a product in re40). Not these but one event influences the species' quantity because this species is on the boundary of the reaction system.

7.2 Species s174

Name thrombin_R

Initial concentration $0\ \mu\mathrm{mol} \cdot \mathrm{l}^{-1}$

This species takes part in two reactions (as a reactant in re40 and as a product in re1).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s174} = v_1 - v_{20} \tag{223}$$

7.3 Species s130

Name pro_thrombinR

Initial concentration $0.42\ \mu\mathrm{mol}\cdot\mathrm{l}^{-1}$

This species takes part in one reaction (as a reactant in re1).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s130} = -v_1 \tag{224}$$

7.4 Species s4

Name thrombin_ligand

Initial concentration $0\ \mu\mathrm{mol}\cdot\mathrm{l}^{-1}$

This species takes part in one reaction (as a product in re40).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s4} = v_{20} \tag{225}$$

7.5 Species s57

Name thrombinR active

Initial concentration $0\ \mu\mathrm{mol}\cdot\mathrm{l}^{-1}$

This species takes part in four reactions (as a reactant in re15, re43, re45 and as a product in re40).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s57} = v_{20} - v_4 - v_{21} - v_{23} \tag{226}$$

7.6 Species s93

Name RGS

Initial concentration $0.2\ \mu\mathrm{mol}\cdot\mathrm{l}^{-1}$

This species takes part in two reactions (as a reactant in re20 and as a product in re34).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s93} = v_{16} - v_8 \tag{227}$$

7.7 Species s165

Name Inositol

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in one reaction (as a product in re60).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s165} = v_{34} \tag{228}$$

7.8 Species s183

Name sa40_degraded

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a product in re14, re45).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s183} = v_3 + v_{23} \tag{229}$$

7.9 Species s55

Name thrombinR

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in three reactions (as a reactant in re14 and as a product in re12, re16).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s55} = v_2 + v_5 - v_3 \tag{230}$$

7.10 Species s184

Name RGS

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re34 and as a product in re20).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s184} = v_8 - v_{16} \tag{231}$$

7.11 Species s48

Name GTP

Initial concentration $50\ \mu\text{mol}\cdot\text{l}^{-1}$

Charge 0

This species takes part in two reactions (as a reactant in re12, re16), which do not influence its rate of change because this species is on the boundary of the reaction system:

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s48} = 0 \tag{232}$$

7.12 Species s187

Name G_sub_q_endsub__alpha_.GTP

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re20, re44, re47, re48 and as a product in re16).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s187} = v_5 - v_8 - v_{22} - v_{24} - v_{25} \tag{233}$$

7.13 Species s50

Name GDP

Initial concentration $5\ \mu\text{mol}\cdot\text{l}^{-1}$

Charge 0

This species takes part in two reactions (as a product in re12, re16), which do not influence its rate of change because this species is on the boundary of the reaction system:

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s50} = 0 \tag{234}$$

7.14 Species s171

Name IP3R

Initial concentration $0.008333\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in one reaction (as a reactant in re68).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s171} = -v_{35} \tag{235}$$

7.15 Species s173

Name 3IP3.IP3R

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a product in re68 and as a modifier in re73).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s173} = v_{35} \tag{236}$$

7.16 Species s98

Name p115RhoGEF

Initial concentration $0.1\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in four reactions (as a reactant in re23, re26 and as a product in re32, re37).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s98} = v_{14} + v_{17} - v_{10} - v_{12} \tag{237}$$

7.17 Species s124

Name Rho-kinase

Initial concentration $0.042\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in seven reactions (as a reactant in re39, re120, re121, re129 and as a product in re123, re124, re130).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s124} = v_{70} + v_{71} + v_{77} - v_{19} - v_{68} - v_{69} - v_{76} \tag{238}$$

7.18 Species s118

Name RhoGAP

Initial concentration $0.1\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re28 and as a product in re33).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s118} = v_{15} - v_{13} \tag{239}$$

7.19 Species s153

Name DAG

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re59, re95, re101 and as a product in re57, re58).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s153} = v_{31} + v_{32} - v_{33} - v_{47} - v_{52} \tag{240}$$

7.20 Species s152

Name IP3

Initial concentration $0.3\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in four reactions (as a reactant in re60, re68 and as a product in re57, re58).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s152} = v_{31} + v_{32} - v_{34} - 3v_{35} \tag{241}$$

7.21 Species s213

Name Rho_GAP

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re33 and as a product in re28).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s213} = v_{13} - v_{15} \tag{242}$$

7.22 Species s214

Name Rho.GTP

Initial concentration $0.0050\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re28, re38, re39 and as a product in re24, re32).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s214} = v_{11} + v_{14} - v_{13} - v_{18} - v_{19} \tag{243}$$

7.23 Species s151

Name PIP2

Initial concentration $10\ \mu\text{mol} \cdot \text{l}^{-1}$

Charge 0

This species takes part in two reactions (as a reactant in re55, re56), which do not influence its rate of change because this species is on the boundary of the reaction system:

$$\frac{\text{d}}{\text{d}t}\text{s151} = 0 \tag{244}$$

7.24 Species s164

Name PC

Initial concentration $0\ \mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in one reaction (as a product in re59).

$$\frac{\text{d}}{\text{d}t}\text{s164} = v_{33} \tag{245}$$

7.25 Species s231

Name Rho.GDP

Initial concentration $0.09\ \mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in four reactions (as a reactant in re24, re26 and as a product in re33, re38).

$$\frac{\text{d}}{\text{d}t}\text{s231} = v_{15} + v_{18} - v_{11} - v_{12} \tag{246}$$

7.26 Species s233

Name Rho_GEF

Initial concentration $0\ \mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in two reactions (as a reactant in re32 and as a product in re26).

$$\frac{\text{d}}{\text{d}t}\text{s233} = v_{12} - v_{14} \tag{247}$$

7.27 Species s245

Name Rho_GEF_active

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species does not take part in any reactions. Its quantity does hence not change over time:

$$\frac{d}{dt}s245 = 0 \tag{248}$$

7.28 Species s252

Name Rho.GTP.Rho-kinase

Initial concentration 0.0050 $\mu mol \cdot l^{-1}$

This species takes part in seven reactions (as a reactant in re125, re126, re131 and as a product in re39, re127, re128, re132).

$$\frac{d}{dt}s252 = v_{19} + v_{74} + v_{75} + v_{79} - v_{72} - v_{73} - v_{78} \tag{249}$$

7.29 Species s277

Name Ca_super_2_plus__endsuper_.CaM

Initial concentration 0.3 $\mu mol \cdot l^{-1}$

This species takes part in three reactions (as a reactant in re87, re93 and as a product in re86).

$$\frac{d}{dt}s277 = v_{38} - v_{39} - v_{45} \tag{250}$$

7.30 Species s278

Name 2Ca_super_2_plus__endsuper_.CaM

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in three reactions (as a reactant in re89, re92 and as a product in re87).

$$\frac{d}{dt}s278 = v_{39} - v_{41} - v_{44} \tag{251}$$

7.31 Species s279

Name 3Ca_super_2_plus__endsuper_.CaM

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in three reactions (as a reactant in re88, re91 and as a product in re89).

$$\frac{d}{dt}s279 = v_{41} - v_{40} - v_{43} \tag{252}$$

7.32 Species s280

Name 4Ca_super_2_plus__endsuper_.CaM

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re90 and as a product in re88).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s280} = v_{40} - v_{42} \tag{253}$$

7.33 Species s289

Name MLCK

Initial concentration $0.69\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in eight reactions (as a reactant in re90, re91, re92, re93, re154, re155 and as a product in re156, re157).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s289} = v_{91} + v_{92} - v_{42} - v_{43} - v_{44} - v_{45} - v_{89} - v_{90} \tag{254}$$

7.34 Species s292

Name MLCK.Ca_super_2_plus__endsuper_.CaM

Initial concentration $0.05\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re158, re162 and as a product in re93, re172, re173).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s292} = v_{45} + v_{107} + v_{108} - v_{93} - v_{97} \tag{255}$$

7.35 Species s293

Name MLCK.2Ca_super_2_plus__endsuper_.CaM

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re159, re163 and as a product in re92, re170, re171).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s293} = v_{44} + v_{105} + v_{106} - v_{94} - v_{98} \tag{256}$$

7.36 Species s294

Name MLCK.3Ca_super_2_plus__endsuper_.CaM

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re160, re164 and as a product in re91, re168, re169).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s294} = v_{43} + v_{103} + v_{104} - v_{95} - v_{99} \tag{257}$$

7.37 Species s295

Name MLCK.4Ca_super_2_plus__endsuper_.CaM

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re161, re165 and as a product in re90, re166, re167).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s295} = v_{42} + v_{101} + v_{102} - v_{96} - v_{100} \tag{258}$$

7.38 Species s309

Name PKC

Initial concentration $2\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in three reactions (as a reactant in re94, re95, re97).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s309} = -v_{46} - v_{47} - v_{49} \tag{259}$$

7.39 Species s310

Name PKC active1

Initial concentration $0.039823\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in four reactions (as a reactant in re108, re112 and as a product in re94, re115).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s310} = v_{46} + v_{63} - v_{56} - v_{60} \tag{260}$$

7.40 Species s311

Name PKC.DAG

Initial concentration 0 μmol$\cdot$l^{-1}

This species takes part in one reaction (as a product in re95).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s311} = v_{47} \tag{261}$$

7.41 Species s314

Name PKC active_2

Initial concentration 0.68193 μmol$\cdot$l^{-1}

This species takes part in four reactions (as a reactant in re107, re111 and as a product in re96, re114).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s314} = v_{48} + v_{62} - v_{55} - v_{59} \tag{262}$$

7.42 Species s324

Name PKC active_3

Initial concentration 0 μmol$\cdot$l^{-1}

This species takes part in four reactions (as a reactant in re106, re110 and as a product in re102, re113).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s324} = v_{53} + v_{61} - v_{54} - v_{58} \tag{263}$$

7.43 Species s329

Name csa39_degraded

Initial concentration 0 μmol$\cdot$l^{-1}

This species takes part in one reaction (as a product in re106).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s329} = v_{54} \tag{264}$$

7.44 Species s330

Name csa36_degraded

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in one reaction (as a product in re107).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s330} = v_{55} \tag{265}$$

7.45 Species s331

Name csa35_degraded

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in one reaction (as a product in re108).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s331} = v_{56} \tag{266}$$

7.46 Species s332

Name PKC active_1.CPI

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re115 and as a product in re112).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s332} = v_{60} - v_{63} \tag{267}$$

7.47 Species s335

Name PKC active_2.CPI

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re114 and as a product in re111).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s335} = v_{59} - v_{62} \tag{268}$$

7.48 Species s338

Name PKC active_3.CPI

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re113 and as a product in re110).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s338} = v_{58} - v_{61} \tag{269}$$

7.49 Species s352

Name CPI-17.MYPT1_PPase

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re119 and as a product in re117).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s352} = v_{65} - v_{67} \tag{270}$$

7.50 Species s355

Name CPI-17.MYPT1_PPase

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a product in re118, re119).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s355} = v_{66} + v_{67} \tag{271}$$

7.51 Species s349

Name CPI-17

Initial concentration $0.059\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re110, re111, re112, re118 and as a product in re116).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s349} = v_{64} - v_{58} - v_{59} - v_{60} - v_{66} \tag{272}$$

7.52 Species s360

Name MLC

Initial concentration $0.1\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in nine reactions (as a reactant in re133, re134 and as a product in re124, re128, re157, re166, re168, re170, re172).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s360} = v_{71} + v_{75} + v_{92} + v_{101} + v_{103} + v_{105} + v_{107} - v_{80} - v_{81} \tag{273}$$

7.53 Species s358

Name MLC

Initial concentration 4.3 $\mu mol \cdot l^{-1}$

This species takes part in nine reactions (as a reactant in re120, re125, re154, re158, re159, re160, re161 and as a product in re139, re140).

$$\frac{d}{dt}s358 = v_{86} + v_{87} - v_{68} - v_{72} - v_{89} - v_{93} - v_{94} - v_{95} - v_{96} \tag{274}$$

7.54 Species s361

Name Rho-kinase.MLC

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re123 and as a product in re120).

$$\frac{d}{dt}s361 = v_{68} - v_{70} \tag{275}$$

7.55 Species s362

Name Rho-kinase.MLC

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re124 and as a product in re121).

$$\frac{d}{dt}s362 = v_{69} - v_{71} \tag{276}$$

7.56 Species s350

Name CPI-17

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in five reactions (as a reactant in re116, re117 and as a product in re113, re114, re115).

$$\frac{d}{dt}s350 = v_{61} + v_{62} + v_{63} - v_{64} - v_{65} \tag{277}$$

7.57 Species s135

Name Ca_super_2_plus__endsuper_

Initial concentration $0.0833\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in twelve reactions (as a reactant in re51, re52, re86, re87, re88, re89, re97, re100, re109 and as a product in re73, re174, re175).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s135} = v_{36} + v_{109} + v_{110} - v_{26} - v_{27} - v_{38} - v_{39} - v_{40} - v_{41} - v_{49} - 2v_{51} - v_{57} \quad (278)$$

7.58 Species s276

Name CaM

Initial concentration $19.65\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in one reaction (as a reactant in re86).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s276} = -v_{38} \quad (279)$$

7.59 Species s172

Name Ca_super_2_plus__endsuper_ store

Initial concentration $155\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in three reactions (as a reactant in re73, re175 and as a product in re85).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s172} = 2v_{37} - v_{36} - v_{110} \quad (280)$$

7.60 Species s410

Name G_beta__gamma__1

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re19 and as a product in re12).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s410} = v_{2} - v_{7} \quad (281)$$

7.61 Species s421

Name G_beta__gamma__2

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re22 and as a product in re16).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s421} = v_{5} - v_{9} \quad (282)$$

7.62 Species s424

Name PLC_beta_

Initial concentration 0.57 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re48, re52).

$$\frac{d}{dt} s424 = -v_{25} - v_{27} \tag{283}$$

7.63 Species s430

Name Ca_super_2_plus__endsuper_ trunsp

Initial concentration 0.5 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re100 and as a product in re85).

$$\frac{d}{dt} s430 = v_{37} - v_{51} \tag{284}$$

7.64 Species s432

Name Ca_super_2_plus__endsuper_ pump

Initial concentration 0.1 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re109 and as a product in re98).

$$\frac{d}{dt} s432 = v_{50} - v_{57} \tag{285}$$

7.65 Species s435

Name G_sub_12_endsub__alpha__beta__gamma__thrombinR active

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re12 and as a product in re43).

$$\frac{d}{dt} s435 = v_{21} - v_{2} \tag{286}$$

7.66 Species s436

Name p115RhoGEF.GTP_alpha_

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in three reactions (as a reactant in re37 and as a product in re23 and as a modifier in re24).

$$\frac{d}{dt} s436 = v_{10} - v_{17} \tag{287}$$

7.67 Species s437

Name G_sub_12_endsub__alpha__beta__gamma_

Initial concentration 0.5 $\mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in two reactions (as a reactant in re43 and as a product in re19).

$$\frac{\text{d}}{\text{d}t}\text{s437} = v_7 - v_{21} \tag{288}$$

7.68 Species s438

Name G_sub_12_endsub__alpha_.GDP

Initial concentration 0 $\mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in re19 and as a product in re17, re37).

$$\frac{\text{d}}{\text{d}t}\text{s438} = v_6 + v_{17} - v_7 \tag{289}$$

7.69 Species s439

Name G_sub_12_endsub__alpha_.GTP

Initial concentration 0 $\mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in re17, re23 and as a product in re12).

$$\frac{\text{d}}{\text{d}t}\text{s439} = v_2 - v_6 - v_{10} \tag{290}$$

7.70 Species s440

Name G_sub_q_endsub__alpha_.GDP

Initial concentration 0 $\mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in four reactions (as a reactant in re22 and as a product in re34, re44, re54).

$$\frac{\text{d}}{\text{d}t}\text{s440} = v_{16} + v_{22} + v_{28} - v_9 \tag{291}$$

7.71 Species s441

Name G_sub_q_endsub__alpha__beta__gamma__thrombinR active

Initial concentration 0 $\mu\text{mol} \cdot \text{l}^{-1}$

This species takes part in two reactions (as a reactant in re16 and as a product in re15).

$$\frac{\text{d}}{\text{d}t}\text{s441} = v_4 - v_5 \tag{292}$$

7.72 Species s442

Name G_sub_q_endsub__alpha__beta__gamma_

Initial concentration $0.5\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re15 and as a product in re22).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s442} = v_9 - v_4 \tag{293}$$

7.73 Species s443

Name PLC_beta_.G_sub_q_endsub__alpha_.GTP

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re51 and as a product in re48).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s443} = v_{25} - v_{26} \tag{294}$$

7.74 Species s444

Name 2Ca_super_2_plus__endsuper_ .Ca_super_2_plus__endsuper_ trunsp

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re85 and as a product in re100).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s444} = v_{51} - v_{37} \tag{295}$$

7.75 Species s446

Name Ca_super_2_plus__endsuper_ pump.Ca_super_2_plus__endsuper_

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re98 and as a product in re109).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s446} = v_{57} - v_{50} \tag{296}$$

7.76 Species s449

Name Rho.GTP.Rho-kinase.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re128 and as a product in re126).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s449} = v_{73} - v_{75} \tag{297}$$

7.77 Species s456

Name Rho.GTP.Rho-kinase.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re127 and as a product in re125).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s456} = v_{72} - v_{74} \tag{298}$$

7.78 Species s359

Name MLC

Initial concentration $0.6\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in 18 reactions (as a reactant in re121, re126, re135, re136, re155, re162, re163, re164, re165 and as a product in re123, re127, re137, re138, re156, re167, re169, re171, re173).

$$\begin{aligned}\frac{\mathrm{d}}{\mathrm{d}t}\text{s359} = {} & v_{70} + v_{74} + v_{84} + v_{85} + v_{91} + v_{102} + v_{104} + v_{106} + v_{108} \\ & - v_{69} - v_{73} - v_{82} - v_{83} - v_{90} - v_{97} - v_{98} - v_{99} - v_{100}\end{aligned} \tag{299}$$

7.79 Species s463

Name MYPT1.Rho-kinase

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re130 and as a product in re129).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s463} = v_{76} - v_{77} \tag{300}$$

7.80 Species s467

Name MYPT1.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re137 and as a product in re133).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{s467} = v_{80} - v_{84} \tag{301}$$

7.81 Species s470

Name MYPT1.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re138 and as a product in re134).

$$\frac{\text{d}}{\text{d}t}\text{s470} = v_{81} - v_{85} \tag{302}$$

7.82 Species s477

Name MYPT1.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re139 and as a product in re135).

$$\frac{\text{d}}{\text{d}t}\text{s477} = v_{82} - v_{86} \tag{303}$$

7.83 Species s480

Name MYPT1.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re140 and as a product in re136).

$$\frac{\text{d}}{\text{d}t}\text{s480} = v_{83} - v_{87} \tag{304}$$

7.84 Species s491

Name MLCK.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re157 and as a product in re155).

$$\frac{\text{d}}{\text{d}t}\text{s491} = v_{90} - v_{92} \tag{305}$$

7.85 Species s487

Name MLCK.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re156 and as a product in re154).

$$\frac{\text{d}}{\text{d}t}\text{s487} = v_{89} - v_{91} \tag{306}$$

7.86 Species s496

Name MYPT1.Rho-kinase

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re132 and as a product in re131).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s496} = v_{78} - v_{79} \tag{307}$$

7.87 Species s506

Name MLCK.4Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re166 and as a product in re165).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s506} = v_{100} - v_{101} \tag{308}$$

7.88 Species s512

Name MLCK.3Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re168 and as a product in re164).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s512} = v_{99} - v_{103} \tag{309}$$

7.89 Species s513

Name MLCK.4Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re167 and as a product in re161).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s513} = v_{96} - v_{102} \tag{310}$$

7.90 Species s520

Name MLCK.3Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re169 and as a product in re160).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s520} = v_{95} - v_{104} \tag{311}$$

7.91 Species s526

Name MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re170 and as a product in re163).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s526} = v_{98} - v_{105} \tag{312}$$

7.92 Species s539

Name MLCK.2Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re171 and as a product in re159).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s539} = v_{94} - v_{106} \tag{313}$$

7.93 Species s546

Name MLCK.Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re172 and as a product in re162).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s546} = v_{97} - v_{107} \tag{314}$$

7.94 Species s551

Name MLCK.Ca_super_2_plus__endsuper_.CaM.MLC

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re173 and as a product in re158).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s551} = v_{93} - v_{108} \tag{315}$$

7.95 Species s556

Name Ca_super_2_plus__endsuper_ ext leak

Initial concentration $0.00833\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in one reaction (as a modifier in re174).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s556} = 0 \tag{316}$$

7.96 Species s267

Name Ca_super_2_plus__endsuper_ ext

Initial concentration 4000 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re174 and as a product in re98), which do not influence its rate of change because this constant species is on the boundary of the reaction system:

$$\frac{d}{dt}s267 = 0 \tag{317}$$

7.97 Species s557

Name Ca_super_2_plus__endsuper_ int leak

Initial concentration 0.0010 $\mu mol \cdot l^{-1}$

This species takes part in one reaction (as a modifier in re175).

$$\frac{d}{dt}s557 = 0 \tag{318}$$

7.98 Species s564

Name PLC_beta_.G_sub_q_endsub__alpha_.GTP.Ca_super_2_plus__endsuper_

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in five reactions (as a reactant in re54, re56 and as a product in re47, re51, re58).

$$\frac{d}{dt}s564 = v_{24} + v_{26} + v_{32} - v_{28} - v_{30} \tag{319}$$

7.99 Species s565

Name PKC.Ca_super_2_plus__endsuper_.DAG

Initial concentration 0 $\mu mol \cdot l^{-1}$

This species takes part in two reactions (as a reactant in re102 and as a product in re101).

$$\frac{d}{dt}s565 = v_{52} - v_{53} \tag{320}$$

7.100 Species s566

Name PKC.Ca_super_2_plus__endsuper_

Initial concentration $0.094\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in three reactions (as a reactant in re96, re101 and as a product in re97).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s566} = v_{49} - v_{48} - v_{52} \tag{321}$$

7.101 Species s567

Name PLC_beta_.G_sub_q_endsub_.GTP.Ca.PIP2

Initial concentration $0\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re58 and as a product in re56).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s567} = v_{30} - v_{32} \tag{322}$$

7.102 Species s568

Name PLC_beta_.Ca.PIP2

Initial concentration $0.08\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in two reactions (as a reactant in re57 and as a product in re55).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s568} = v_{29} - v_{31} \tag{323}$$

7.103 Species s569

Name PLC_beta_.Ca_super_2_plus__endsuper_

Initial concentration $0.15\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in five reactions (as a reactant in re47, re55 and as a product in re52, re54, re57).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s569} = v_{27} + v_{28} + v_{31} - v_{24} - v_{29} \tag{324}$$

7.104 Species s351

Name MYPT1_PPase

Initial concentration $0.7\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in nine reactions (as a reactant in re117, re118, re129, re131, re134, re136 and as a product in re138, re140, re141).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s351} = v_{85} + v_{87} + v_{88} - v_{65} - v_{66} - v_{76} - v_{78} - v_{81} - v_{83} \tag{325}$$

7.105 Species s570

Name MYPT1_PPase

Initial concentration $0.4941\ \mu\text{mol}\cdot\text{l}^{-1}$

This species takes part in seven reactions (as a reactant in re133, re135, re141 and as a product in re130, re132, re137, re139).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{s570} = v_{77} + v_{79} + v_{84} + v_{86} - v_{80} - v_{82} - v_{88} \tag{326}$$

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