SBML Model Report

Model name: "Firczuk2013 - Eukaryotic mRNA translation machinery"

May 6, 2016

1 General Overview

This is a document in SBML Level 2 Version 4 format. This model was created by the following three authors: Pedro Mendes[1], Shichina Kannambath[2] and Juergen Pahle[3] at April 30th 2011 at 9:53 p.m. and last time modified at June 21st 2013 at 11:28 a.m. Table 1 provides 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	1
species types	0	species	166
events	0	constraints	0
reactions	141	function definitions	3
global parameters	12	unit definitions	0
rules	2	initial assignments	2

Model Notes

Firczuk2013 - Eukaryotic mRNA translation machinery

This is a model of *Saccharomyces cerevisiae* mRNA translation which includes the initiation, elongation and termination phases. The model is for 20 condon mRNAs. The building of a

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[1]University of Manchester, `pedro.mendes@manchester.ac.uk`

[2]The University of Manchester, `Shichina.K@postgrad.manchester.ac.uk`

[3]The University of Manchester, `juergen@pahle.de`

multi-factor complex in initiation and also the different processes in elongation and termination are modelled in detail. The model takes into account that ribosomes cover more than one codon of mRNA so that the movement of ribosomes are effectively blocked by other ribosomes several codons downstream. It is assumed that 15 codons are occupied by each ribosome. This blocking effect is considered in reaction R18 in initiation and also reaction R26, the reaction where translocation of ribosomes takes place in elongation. The kinetic functions of these two reactions are based on MacDonald et al. 1968 and Heinrich & Rapaport 1980. All other kinetic functions follow mass-action kinetics. The concentrations of transfer RNA species (Met-tRNA, aa-tRNA and tRNA in the model) are kept constant, while the other species' concentrations can change in the course of the simulation. The model describes the translation of a short mRNA with 20 codons. Therefore, all reactions in the elongation cycle (R22, R23, R25, R26, R28 and R29) and the corresponding species are replicated accordingly to model the species with ribosomes bound at different positions. In summary, the model contains 165 different species and 141 reactions.

The value of the 56 rate constant parameters were estimated by fitting the model against a series of experimental data consisting of modulation of the various translation factors (Figures 2, 3 and S3). Overall the parameter estimation was carried out over 212 different data points (steady states).

This model is described in the article:An in vivo control map for the eukaryotic mRNA translation machineryHelena Firczuk, Shichina Kannambath, Jrgen Pahle, Amy Claydon, Robert Beynon, John Duncan, Hans Westerhoff, Pedro Mendes and John EG McCarthyMolecular Systems Biology. 9:635

Abstract:

Rate control analysis defines the in vivo control map governing yeast protein synthesis and generates an extensively parameterized digital model of the translation pathway. Among other non-intuitive outcomes, translation demonstrates a high degree of functional modularity and comprises a non-stoichiometric combination of proteins manifesting functional convergence on a shared maximal translation rate. In exponentially growing cells, polypeptide elongation (eEF1A, eEF2, and eEF3) exerts the strongest control. The two other strong control points are recruitment of mRNA and tRNAi to the 40S ribosomal subunit (eIF4F and eIF2) and termination (eRF1; Dbp5). In contrast, factors that are found to promote mRNA scanning efficiency on a longer than-average 5untranslated region (eIF1, eIF1A, Ded1, eIF2B, eIF3, and eIF5) exceed the levels required for maximal control. This is expected to allow the cell to minimize scanning transition times, particularly for longer 5UTRs. The analysis reveals these and other collective adaptations of control shared across the factors, as well as features that reflect functional modularity and system robustness. Remarkably, gene duplication is implicated in the fine control of cellular protein synthesis.

This model is hosted on BioModels Database and identified by: BIOMD0000000457 .

To cite BioModels Database, please use: BioModels Database: An enhanced, curated and annotated resourcefor published quantitative kinetic models .

Produced by SBML2LATEX

2 Unit Definitions

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

2.1 Unit `substance`

Notes Mole is the predefined SBML unit for `substance`.

Definition mol

2.2 Unit `volume`

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

Definition l

2.3 Unit `area`

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

Definition m^2

2.4 Unit `length`

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

Definition m

2.5 Unit `time`

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

Definition s

3 Compartment

This model contains one compartment.

Table 2: Properties of all compartments.

Id	Name	SBO	Spatial Dimensions	Size	Unit	Constant	Outside
compartment_1	cytoplasm		3	$4 \cdot 10^{-14}$	1	☑	

3.1 Compartment `compartment_1`

This is a three dimensional compartment with a constant size of $4 \cdot 10^{-14}$ litre.

Name cytoplasm

4 Species

This model contains 166 species. The boundary condition of three of these species is set to `true` so that these species' amount cannot be changed by any reaction. Section 10 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
species_1	eIF2_GDP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_2	eIF2B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_3	eIF2_GDP_eIF2B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_4	eIF2_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_5	Met-tRNA	compartment_1	$mol \cdot l^{-1}$	✓	✓
species_6	eIF2_GTP_Met-tRNA	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_7	eIF3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_8	eIF5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_9	eIF3_eIF5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_10	eIF3_eIF5_eIF2_GTP_Met-tRNA	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_11	eIF1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_12	eIF1_eIF3_eIF5_eIF2_GTP_Met-tRNA	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_13	40S	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_14	eIF1A	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_15	40S_eIF1A	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_16	43S	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_17	eIF4E	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_18	eIF4G	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_19	eIF4E_eIF4G	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_20	mRNA_cap	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_21	Pab1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
species_22	mRNA_Pab1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_23	eIF4E_eIF4G_mRNA_Pab1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_24	eIF4A	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_25	eIF4B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_26	eIF4A_eIF4B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_27	eIF4E_eIF4G_mRNA_Pab1_eIF4A_eIF4B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_28	48S	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_29	Ded1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_30	48S_Ded1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_31	eIF5B_GDP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_32	eIF5B_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_33	48S_Ded1_eIF5B_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_34	60S	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_35	eEF1A_GDP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_36	eEF1B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_37	eEF1A_GDP_eEF1B	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_38	eEF1A_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_39	aa-tRNA	compartment_1	$mol \cdot l^{-1}$	☑	☑
species_40	aa-tRNA_eEF1A_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_41	eEF2_GDP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_42	eEF2_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_43	eEF3_GDP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_44	eEF3_GTP	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_45	tRNA	compartment_1	$mol \cdot l^{-1}$	☑	☑
species_46	80S_1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_47	80S_aa-tRNA_eEF1A_GTP_1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_48	80S_aa-tRNA_1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
species_49	80S_aa-tRNA_eEF2_GTP_1	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_50	80S_2	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_51	80S_aa-tRNA_eEF1A_GTP_2	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_52	80S_aa-tRNA_2	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_53	80S_aa-tRNA_eEF2_GTP_2	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_54	80S_tRNA_2	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_55	80S_tRNA_eEF3_GTP_2	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_56	80S_3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_57	80S_aa-tRNA_eEF1A_GTP_3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_58	80S_aa-tRNA_3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_59	80S_aa-tRNA_eEF2_GTP_3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_60	80S_tRNA_3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_61	80S_tRNA_eEF3_GTP_3	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_62	80S_4	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_63	80S_aa-tRNA_eEF1A_GTP_4	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_64	80S_aa-tRNA_4	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_65	80S_aa-tRNA_eEF2_GTP_4	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_66	80S_tRNA_4	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_67	80S_tRNA_eEF3_GTP_4	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_68	80S_5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_69	80S_aa-tRNA_eEF1A_GTP_5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_70	80S_aa-tRNA_5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_71	80S_aa-tRNA_eEF2_GTP_5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_72	80S_tRNA_5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_73	80S_tRNA_eEF3_GTP_5	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_74	80S_6	compartment_1	$mol \cdot l^{-1}$	⊟	⊟
species_75	80S_aa-tRNA_eEF1A_GTP_6	compartment_1	$mol \cdot l^{-1}$	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condi-tion
species_76	80S_aa-tRNA_6	compartment_1	mol·l^{-1}	⊟	⊟
species_77	80S_aa-tRNA_eEF2_GTP_6	compartment_1	mol·l^{-1}	⊟	⊟
species_78	80S_tRNA_6	compartment_1	mol·l^{-1}	⊟	⊟
species_79	80S_tRNA_eEF3_GTP_6	compartment_1	mol·l^{-1}	⊟	⊟
species_80	80S_7	compartment_1	mol·l^{-1}	⊟	⊟
species_81	80S_aa-tRNA_eEF1A_GTP_7	compartment_1	mol·l^{-1}	⊟	⊟
species_82	80S_aa-tRNA_7	compartment_1	mol·l^{-1}	⊟	⊟
species_83	80S_aa-tRNA_eEF2_GTP_7	compartment_1	mol·l^{-1}	⊟	⊟
species_84	80S_tRNA_7	compartment_1	mol·l^{-1}	⊟	⊟
species_85	80S_tRNA_eEF3_GTP_7	compartment_1	mol·l^{-1}	⊟	⊟
species_86	80S_8	compartment_1	mol·l^{-1}	⊟	⊟
species_87	80S_aa-tRNA_eEF1A_GTP_8	compartment_1	mol·l^{-1}	⊟	⊟
species_88	80S_aa-tRNA_8	compartment_1	mol·l^{-1}	⊟	⊟
species_89	80S_aa-tRNA_eEF2_GTP_8	compartment_1	mol·l^{-1}	⊟	⊟
species_90	80S_tRNA_8	compartment_1	mol·l^{-1}	⊟	⊟
species_91	80S_tRNA_eEF3_GTP_8	compartment_1	mol·l^{-1}	⊟	⊟
species_92	80S_9	compartment_1	mol·l^{-1}	⊟	⊟
species_93	80S_aa-tRNA_eEF1A_GTP_9	compartment_1	mol·l^{-1}	⊟	⊟
species_94	80S_aa-tRNA_9	compartment_1	mol·l^{-1}	⊟	⊟
species_95	80S_aa-tRNA_eEF2_GTP_9	compartment_1	mol·l^{-1}	⊟	⊟
species_96	80S_tRNA_9	compartment_1	mol·l^{-1}	⊟	⊟
species_97	80S_tRNA_eEF3_GTP_9	compartment_1	mol·l^{-1}	⊟	⊟
species_98	80S_10	compartment_1	mol·l^{-1}	⊟	⊟
species_99	80S_aa-tRNA_eEF1A_GTP_10	compartment_1	mol·l^{-1}	⊟	⊟
species_100	80S_aa-tRNA_10	compartment_1	mol·l^{-1}	⊟	⊟
species_101	80S_aa-tRNA_eEF2_GTP_10	compartment_1	mol·l^{-1}	⊟	⊟
species_102	80S_tRNA_10	compartment_1	mol·l^{-1}	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
species_103	80S_tRNA_eEF3_GTP_10	compartment_1	mol·l^{-1}	⊟	⊟
species_104	80S_11	compartment_1	mol·l^{-1}	⊟	⊟
species_105	80S_aa-tRNA_eEF1A_GTP_11	compartment_1	mol·l^{-1}	⊟	⊟
species_106	80S_aa-tRNA_11	compartment_1	mol·l^{-1}	⊟	⊟
species_107	80S_aa-tRNA_eEF2_GTP_11	compartment_1	mol·l^{-1}	⊟	⊟
species_108	80S_tRNA_11	compartment_1	mol·l^{-1}	⊟	⊟
species_109	80S_tRNA_eEF3_GTP_11	compartment_1	mol·l^{-1}	⊟	⊟
species_110	80S_12	compartment_1	mol·l^{-1}	⊟	⊟
species_111	80S_aa-tRNA_eEF1A_GTP_12	compartment_1	mol·l^{-1}	⊟	⊟
species_112	80S_aa-tRNA_12	compartment_1	mol·l^{-1}	⊟	⊟
species_113	80S_aa-tRNA_eEF2_GTP_12	compartment_1	mol·l^{-1}	⊟	⊟
species_114	80S_tRNA_12	compartment_1	mol·l^{-1}	⊟	⊟
species_115	80S_tRNA_eEF3_GTP_12	compartment_1	mol·l^{-1}	⊟	⊟
species_116	80S_13	compartment_1	mol·l^{-1}	⊟	⊟
species_117	80S_aa-tRNA_eEF1A_GTP_13	compartment_1	mol·l^{-1}	⊟	⊟
species_118	80S_aa-tRNA_13	compartment_1	mol·l^{-1}	⊟	⊟
species_119	80S_aa-tRNA_eEF2_GTP_13	compartment_1	mol·l^{-1}	⊟	⊟
species_120	80S_tRNA_13	compartment_1	mol·l^{-1}	⊟	⊟
species_121	80S_tRNA_eEF3_GTP_13	compartment_1	mol·l^{-1}	⊟	⊟
species_122	80S_14	compartment_1	mol·l^{-1}	⊟	⊟
species_123	80S_aa-tRNA_eEF1A_GTP_14	compartment_1	mol·l^{-1}	⊟	⊟
species_124	80S_aa-tRNA_14	compartment_1	mol·l^{-1}	⊟	⊟
species_125	80S_aa-tRNA_eEF2_GTP_14	compartment_1	mol·l^{-1}	⊟	⊟
species_126	80S_tRNA_14	compartment_1	mol·l^{-1}	⊟	⊟
species_127	80S_tRNA_eEF3_GTP_14	compartment_1	mol·l^{-1}	⊟	⊟
species_128	80S_15	compartment_1	mol·l^{-1}	⊟	⊟
species_129	80S_aa-tRNA_eEF1A_GTP_15	compartment_1	mol·l^{-1}	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
species_130	80S_aa-tRNA_15	compartment_1	mol·l^{-1}	⊟	⊟
species_131	80S_aa-tRNA_eEF2_GTP_15	compartment_1	mol·l^{-1}	⊟	⊟
species_132	80S_tRNA_15	compartment_1	mol·l^{-1}	⊟	⊟
species_133	80S_tRNA_eEF3_GTP_15	compartment_1	mol·l^{-1}	⊟	⊟
species_134	80S_16	compartment_1	mol·l^{-1}	⊟	⊟
species_135	80S_aa-tRNA_eEF1A_GTP_16	compartment_1	mol·l^{-1}	⊟	⊟
species_136	80S_aa-tRNA_16	compartment_1	mol·l^{-1}	⊟	⊟
species_137	80S_aa-tRNA_eEF2_GTP_16	compartment_1	mol·l^{-1}	⊟	⊟
species_138	80S_tRNA_16	compartment_1	mol·l^{-1}	⊟	⊟
species_139	80S_tRNA_eEF3_GTP_16	compartment_1	mol·l^{-1}	⊟	⊟
species_140	80S_17	compartment_1	mol·l^{-1}	⊟	⊟
species_141	80S_aa-tRNA_eEF1A_GTP_17	compartment_1	mol·l^{-1}	⊟	⊟
species_142	80S_aa-tRNA_17	compartment_1	mol·l^{-1}	⊟	⊟
species_143	80S_aa-tRNA_eEF2_GTP_17	compartment_1	mol·l^{-1}	⊟	⊟
species_144	80S_tRNA_17	compartment_1	mol·l^{-1}	⊟	⊟
species_145	80S_tRNA_eEF3_GTP_17	compartment_1	mol·l^{-1}	⊟	⊟
species_146	80S_18	compartment_1	mol·l^{-1}	⊟	⊟
species_147	80S_aa-tRNA_eEF1A_GTP_18	compartment_1	mol·l^{-1}	⊟	⊟
species_148	80S_aa-tRNA_18	compartment_1	mol·l^{-1}	⊟	⊟
species_149	80S_aa-tRNA_eEF2_GTP_18	compartment_1	mol·l^{-1}	⊟	⊟
species_150	80S_tRNA_18	compartment_1	mol·l^{-1}	⊟	⊟
species_151	80S_tRNA_eEF3_GTP_18	compartment_1	mol·l^{-1}	⊟	⊟
species_152	80S_19	compartment_1	mol·l^{-1}	⊟	⊟
species_153	80S_aa-tRNA_eEF1A_GTP_19	compartment_1	mol·l^{-1}	⊟	⊟
species_154	80S_aa-tRNA_19	compartment_1	mol·l^{-1}	⊟	⊟
species_155	80S_aa-tRNA_eEF2_GTP_19	compartment_1	mol·l^{-1}	⊟	⊟
species_156	80S_tRNA_19	compartment_1	mol·l^{-1}	⊟	⊟

Id	Name	Compartment	Derived Unit	Constant	Boundary Condition
species_157	80S_tRNA_eEF3_GTP_19	compartment_1	mol·l^{-1}	⊟	⊟
species_158	80S_20	compartment_1	mol·l^{-1}	⊟	⊟
species_159	80S_tRNA_20	compartment_1	mol·l^{-1}	⊟	⊟
species_160	80S_tRNA_eEF3_GTP_20	compartment_1	mol·l^{-1}	⊟	⊟
species_161	eRF3_GDP	compartment_1	mol·l^{-1}	⊟	⊟
species_162	eRF3_GTP	compartment_1	mol·l^{-1}	⊟	⊟
species_163	eRF1	compartment_1	mol·l^{-1}	⊟	⊟
species_164	eRF1_eRF3_GTP	compartment_1	mol·l^{-1}	⊟	⊟
species_165	80S_eRF1_eRF3_GTP	compartment_1	mol·l^{-1}	⊟	⊟
species_166	eIF4A_eIF4E_eIF4G_mRNA_Pab1	compartment_1	mol·l^{-1}	⊟	⊟

5 Parameters

This model contains twelve global parameters.

Table 4: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
parameter_1	mRNA_tot		$7.16464328895 \cdot 10^{-7}$		☑
parameter_2	k22f		$8.10035535716195 \cdot 10^{9}$		☑
parameter_3	k22b		0.284		☑
parameter_4	k23f		28324.356		☑
parameter_5	k25f		$3.10377169466493 \cdot 10^{9}$		☑
parameter_6	k25b		0.003		☑
parameter_7	k26f		2306950.000		☑
parameter_8	k28f		$2.24052 \cdot 10^{9}$		☑
parameter_9	k29f		72911.674		☑
parameter_10	mRNA_bound		0.000		⊟
parameter_11	mRNA_free		$7.16464328895 \cdot 10^{-7}$		⊟
parameter_12	mRNA_tot_Molar		$2.86585731558 \cdot 10^{-20}$		☑

6 Initialassignments

This is an overview of two initialassignments.

6.1 Initialassignment species_20

Derived unit contains undeclared units

Math parameter_1

6.2 Initialassignment parameter_1

Derived unit contains undeclared units

Math $\frac{\text{parameter\_12}}{\text{vol(compartment\_1)}}$

7 Function definitions

This is an overview of three function definitions.

7.1 Function definition function_1

Name Initiation with blocking [1] [1]

Arguments k, substrate1, substrate2, mRNA_tot, A1, B1, C1, D1, A2, B2, C2, D2, E2, F2, A3, B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6, F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10, C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13, B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15

Mathematical Expression

$$
\begin{aligned}
&k \cdot \text{substrate1} \cdot \text{substrate2} \\
&\cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + A2 + B2 + C2 + D2 + E2 + F2 \\
&+ A3 + B3 + C3 + D3 + E3 + F3 + A4 + B4 + C4 + D4 + E4 + F4 \\
&+ A5 + B5 + C5 + D5 + E5 + F5 + A6 + B6 + C6 + D6 + E6 + F6 \\
&+ A7 + B7 + C7 + D7 + E7 + F7 + A8 + B8 + C8 + D8 + E8 + F8 + A9 \\
&+ B9 + C9 + D9 + E9 + F9 + A10 + B10 + C10 + D10 + E10 + F10 \\
&+ A11 + B11 + C11 + D11 + E11 + F11 + A12 + B12 + C12 + D12 \\
&+ E12 + F12 + A13 + B13 + C13 + D13 + E13 + F13 + A14 + B14 \\
&+ C14 + D14 + E14 + F14 + A15 + B15 + C15 + D15 + E15 + F15))
\end{aligned}
\tag{1}
$$

7.2 Function definition `function_2`

Name Translocation with blocking (interior) [1] [1]

Arguments k, substrate, mRNA_tot, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6, F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10, C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13, B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15

Mathematical Expression

$$
\frac{k \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 +}
\tag{2}
$$

7.3 Function definition `function_3`

Name Translocation with blocking (for codon number (length(mRNA)-length(Ribosome)) [1] [1]

Arguments k, substrate, mRNA_tot, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6, F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10, C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13, B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, E15, F15

Mathematical Expression

$$\frac{k \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3} \quad (3)$$

8 Rules

This is an overview of two rules.

8.1 Rule parameter_10

Rule parameter_10 is an assignment rule for parameter parameter_10:

$$
\begin{aligned}
\text{parameter\_10} = {}& [\text{species\_46}] + [\text{species\_50}] + [\text{species\_56}] + [\text{species\_62}] + [\text{species\_68}] \\
&+ [\text{species\_74}] + [\text{species\_80}] + [\text{species\_86}] + [\text{species\_92}] + [\text{species\_98}] \\
&+ [\text{species\_104}] + [\text{species\_110}] + [\text{species\_116}] + [\text{species\_122}] \\
&+ [\text{species\_128}] + [\text{species\_134}] + [\text{species\_140}] + [\text{species\_146}] \\
&+ [\text{species\_152}] + [\text{species\_158}] + [\text{species\_47}] + [\text{species\_51}] + [\text{species\_57}] \\
&+ [\text{species\_63}] + [\text{species\_69}] + [\text{species\_75}] + [\text{species\_81}] + [\text{species\_87}] \\
&+ [\text{species\_93}] + [\text{species\_99}] + [\text{species\_105}] + [\text{species\_111}] + [\text{species\_117}] \\
&+ [\text{species\_123}] + [\text{species\_129}] + [\text{species\_135}] + [\text{species\_141}] + [\text{species\_147}] \\
&+ [\text{species\_153}] + [\text{species\_48}] + [\text{species\_52}] + [\text{species\_58}] + [\text{species\_64}] \\
&+ [\text{species\_70}] + [\text{species\_76}] + [\text{species\_82}] + [\text{species\_88}] + [\text{species\_94}] \\
&+ [\text{species\_100}] + [\text{species\_106}] + [\text{species\_112}] + [\text{species\_118}] + [\text{species\_124}] \\
&+ [\text{species\_130}] + [\text{species\_136}] + [\text{species\_142}] + [\text{species\_148}] + [\text{species\_154}] \\
&+ [\text{species\_49}] + [\text{species\_53}] + [\text{species\_59}] + [\text{species\_65}] + [\text{species\_71}] \\
&+ [\text{species\_77}] + [\text{species\_83}] + [\text{species\_89}] + [\text{species\_95}] + [\text{species\_101}] \\
&+ [\text{species\_107}] + [\text{species\_113}] + [\text{species\_119}] + [\text{species\_125}] + [\text{species\_131}] \\
&+ [\text{species\_137}] + [\text{species\_143}] + [\text{species\_149}] + [\text{species\_155}] + [\text{species\_54}] \\
&+ [\text{species\_60}] + [\text{species\_66}] + [\text{species\_72}] + [\text{species\_78}] + [\text{species\_84}] \\
&+ [\text{species\_90}] + [\text{species\_96}] + [\text{species\_102}] + [\text{species\_108}] + [\text{species\_114}] \\
&+ [\text{species\_120}] + [\text{species\_126}] + [\text{species\_132}] + [\text{species\_138}] + [\text{species\_144}] \\
&+ [\text{species\_150}] + [\text{species\_156}] + [\text{species\_159}] + [\text{species\_55}] + [\text{species\_61}] \\
&+ [\text{species\_67}] + [\text{species\_73}] + [\text{species\_79}] + [\text{species\_85}] + [\text{species\_91}] \\
&+ [\text{species\_97}] + [\text{species\_103}] + [\text{species\_109}] + [\text{species\_115}] + [\text{species\_121}] \\
&+ [\text{species\_127}] + [\text{species\_133}] + [\text{species\_139}] + [\text{species\_145}] \\
&+ [\text{species\_151}] + [\text{species\_157}] + [\text{species\_160}] + [\text{species\_165}]
\end{aligned}
$$

$$(4)$$

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

8.2 Rule `parameter_11`

Rule `parameter_11` is an assignment rule for parameter `parameter_11`:

$$\text{parameter\_11} = \text{parameter\_1} - \text{parameter\_10} \qquad (5)$$

9 Reactions

This model contains 141 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 5: Overview of all reactions

№	Id	Name	Reaction Equation	SBO
1	reaction_1	reaction1	$species\_1 + species\_2 \xrightleftharpoons{species\_1,\ species\_2,\ species\_3} species\_3$	
2	reaction_2	reaction2	$species\_3 \xrightleftharpoons{species\_3,\ species\_4,\ species\_2} species\_4 + species\_2$	
3	reaction_3	reaction3	$species\_4 + species\_5 \xrightleftharpoons{species\_4,\ species\_5,\ species\_6} species\_6$	
4	reaction_4	reaction4	$species\_7 + species\_8 \xrightleftharpoons{species\_7,\ species\_8,\ species\_9} species\_9$	
5	reaction_5	reaction5	$species\_6 + species\_9 \xrightleftharpoons{species\_6,\ species\_9,\ species\_10} species\_10$	
6	reaction_6	reaction6	$species\_11 + species\_10 \xrightleftharpoons{species\_11,\ species\_10,\ species\_12} species\_12$	
7	reaction_7	reaction7	$species\_13 + species\_14 \xrightarrow{species\_13,\ species\_14} species\_15$	
8	reaction_8	reaction8	$species\_12 + species\_15 \xrightarrow{species\_12,\ species\_15} species\_16$	
9	reaction_9	reaction9	$species\_17 + species\_18 \xrightarrow{species\_17,\ species\_18,\ species\_19} species\_19$	
10	reaction_10	reaction10	$species\_20 + species\_21 \xrightarrow{species\_20,\ species\_21,\ species\_22} species\_22$	
11	reaction_11	reaction11	$species\_19 + species\_22 \xrightarrow{species\_19,\ species\_22,\ species\_23} species\_23$	
12	reaction_12	reaction12	$species\_24 + species\_23 \xrightleftharpoons{species\_24,\ species\_23,\ species\_166} species\_166$	
13	reaction_13	reaction13	$species\_25 + species\_166 \xrightleftharpoons{species\_25,\ species\_166,\ species\_27} species\_27$	
14	reaction_14	reaction14	$species\_16 + species\_27 \xrightarrow{species\_16,\ species\_27} species\_28$	

№	Id	Name	Reaction Equation	SBO
15	reaction_15	reaction15	species_28 + species_29 $\xrightleftharpoons{\text{species\_28, species\_29, species\_30}}$ species_30	
16	reaction_16	reaction16	species_31 $\xrightleftharpoons{\text{species\_31, species\_32}}$ species_32	
17	reaction_17	reaction17	species_30 + species_32 $\xrightleftharpoons{\text{species\_30, species\_32, species\_33}}$ species_33	
18	reaction_18	reaction18	species_34 + species_33 $\xrightarrow{\text{species\_46, species\_47, species\_48, species\_49, species\_50, sp}}$ species_11 + species_14 + species_1 + species_7 + species_24 + species_25 + species_17 + species_18 + species_8 + species_31 + species_21 + species_20 + species_29	
19	reaction_19	reaction19	species_35 + species_36 $\xrightleftharpoons{\text{species\_35, species\_36, species\_37}}$ species_37	
20	reaction_20	reaction20	species_37 $\xrightleftharpoons{\text{species\_37, species\_38, species\_36}}$ species_38 + species_36	
21	reaction_21	reaction21	species_38 + species_39 $\xrightleftharpoons{\text{species\_38, species\_39, species\_40}}$ species_40	
22	reaction_22	reaction24	species_41 $\xrightleftharpoons{\text{species\_41, species\_42}}$ species_42	
23	reaction_23	reaction27	species_43 $\xrightleftharpoons{\text{species\_43, species\_44}}$ species_44	
24	reaction_24	reaction22_1	species_40 + species_46 $\xrightleftharpoons{\text{species\_40, species\_46, species\_47}}$ species_47	
25	reaction_25	reaction23_1	species_47 $\xrightarrow{\text{species\_47}}$ species_48 + species_35	
26	reaction_26	reaction25_1	species_42 + species_48 $\xrightleftharpoons{\text{species\_42, species\_48, species\_49}}$ species_49	
27	reaction_27	reaction26_1	species_49 $\xrightarrow{\text{species\_50, species\_51, species\_52, species\_53, species\_54, species\_55, spe}}$ species_41	
28	reaction_28	reaction22_2	species_40 + species_50 $\xrightleftharpoons{\text{species\_40, species\_50, species\_51}}$ species_51	
29	reaction_29	reaction23_2	species_51 $\xrightarrow{\text{species\_51}}$ species_52 + species_35	

№	Id	Name	Reaction Equation	SBO
30	reaction_30	reaction25_2	species_42+species_52 $\xrightleftharpoons{\text{species\_42, species\_52, species\_53}}$ species_53	
31	reaction_31	reaction26_2	species_53 $\xrightarrow{\text{species\_56, species\_57, species\_58, species\_59, species\_60, species\_61, spe}}$ species_41	
32	reaction_32	reaction28_2	species_54+species_44 $\xrightarrow{\text{species\_54, species\_44}}$ species_55	
33	reaction_33	reaction29_2	species_55 $\xrightarrow{\text{species\_55}}$ species_50 + species_43 + species_45	
34	reaction_34	reaction22_3	species_40+species_56 $\xrightleftharpoons{\text{species\_40, species\_56, species\_57}}$ species_57	
35	reaction_35	reaction23_3	species_57 $\xrightarrow{\text{species\_57}}$ species_58+species_35	
36	reaction_36	reaction25_3	species_42+species_58 $\xrightleftharpoons{\text{species\_42, species\_58, species\_59}}$ species_59	
37	reaction_37	reaction26_3	species_59 $\xrightarrow{\text{species\_62, species\_63, species\_64, species\_65, species\_66, species\_67, spe}}$ species_41	
38	reaction_38	reaction28_3	species_60+species_44 $\xrightarrow{\text{species\_60, species\_44}}$ species_61	
39	reaction_39	reaction29_3	species_61 $\xrightarrow{\text{species\_61}}$ species_56 + species_43 + species_45	
40	reaction_40	reaction22_4	species_40+species_62 $\xrightleftharpoons{\text{species\_40, species\_62, species\_63}}$ species_63	
41	reaction_41	reaction23_4	species_63 $\xrightarrow{\text{species\_63}}$ species_64+species_35	
42	reaction_42	reaction25_4	species_42+species_64 $\xrightleftharpoons{\text{species\_42, species\_64, species\_65}}$ species_65	
43	reaction_43	reaction26_4	species_65 $\xrightarrow{\text{species\_68, species\_69, species\_70, species\_71, species\_72, species\_73, spe}}$ species_41	
44	reaction_44	reaction28_4	species_66+species_44 $\xrightarrow{\text{species\_66, species\_44}}$ species_67	

№	Id	Name	Reaction Equation	SBO
45	reaction_45	reaction29_4	species_67 $\xrightarrow{\text{species\_67}}$ species_62 + species_43 + species_45	
46	reaction_46	reaction22_5	species_40+species_68 $\xrightleftharpoons{\text{species\_40, species\_68, species\_69}}$ species_69	
47	reaction_47	reaction23_5	species_69 $\xrightarrow{\text{species\_69}}$ species_70+species_35	
48	reaction_48	reaction25_5	species_42+species_70 $\xrightleftharpoons{\text{species\_42, species\_70, species\_71}}$ species_71	
49	reaction_49	reaction26_5	species_71 $\xrightarrow{\text{species\_74, species\_75, species\_76, species\_77, species\_78, species\_79, spe}}$ species_41	
50	reaction_50	reaction28_5	species_72+species_44 $\xrightarrow{\text{species\_72, species\_44}}$ species_73	
51	reaction_51	reaction29_5	species_73 $\xrightarrow{\text{species\_73}}$ species_68 + species_43 + species_45	
52	reaction_52	reaction22_6	species_40+species_74 $\xrightleftharpoons{\text{species\_40, species\_74, species\_75}}$ species_75	
53	reaction_53	reaction23_6	species_75 $\xrightarrow{\text{species\_75}}$ species_76+species_35	
54	reaction_54	reaction25_6	species_42+species_76 $\xrightleftharpoons{\text{species\_42, species\_76, species\_77}}$ species_77	
55	reaction_55	reaction26_6	species_77 $\xrightarrow{\text{species\_77}}$ species_84+species_41	
56	reaction_56	reaction28_6	species_78+species_44 $\xrightarrow{\text{species\_78, species\_44}}$ species_79	
57	reaction_57	reaction29_6	species_79 $\xrightarrow{\text{species\_79}}$ species_74 + species_43 + species_45	
58	reaction_58	reaction22_7	species_40+species_80 $\xrightleftharpoons{\text{species\_40, species\_80, species\_81}}$ species_81	
59	reaction_59	reaction23_7	species_81 $\xrightarrow{\text{species\_81}}$ species_82+species_35	
60	reaction_60	reaction25_7	species_42+species_82 $\xrightleftharpoons{\text{species\_42, species\_82, species\_83}}$ species_83	

№	Id	Name	Reaction Equation	SBO
61	reaction_61	reaction26_7	$\text{species\_83} \xrightarrow{\text{species\_83}} \text{species\_90} + \text{species\_41}$	
62	reaction_62	reaction28_7	$\text{species\_84} + \text{species\_44} \xrightarrow{\text{species\_84, species\_44}} \text{species\_85}$	
63	reaction_63	reaction29_7	$\text{species\_85} \xrightarrow{\text{species\_85}} \text{species\_80} + \text{species\_43} + \text{species\_45}$	
64	reaction_64	reaction22_8	$\text{species\_40} + \text{species\_86} \xrightleftharpoons{\text{species\_40, species\_86, species\_87}} \text{species\_87}$	
65	reaction_65	reaction23_8	$\text{species\_87} \xrightarrow{\text{species\_87}} \text{species\_88} + \text{species\_35}$	
66	reaction_66	reaction25_8	$\text{species\_42} + \text{species\_88} \xrightleftharpoons{\text{species\_42, species\_88, species\_89}} \text{species\_89}$	
67	reaction_67	reaction26_8	$\text{species\_89} \xrightarrow{\text{species\_89}} \text{species\_96} + \text{species\_41}$	
68	reaction_68	reaction28_8	$\text{species\_90} + \text{species\_44} \xrightarrow{\text{species\_90, species\_44}} \text{species\_91}$	
69	reaction_69	reaction29_8	$\text{species\_91} \xrightarrow{\text{species\_91}} \text{species\_86} + \text{species\_43} + \text{species\_45}$	
70	reaction_70	reaction22_9	$\text{species\_40} + \text{species\_92} \xrightleftharpoons{\text{species\_40, species\_92, species\_93}} \text{species\_93}$	
71	reaction_71	reaction23_9	$\text{species\_93} \xrightarrow{\text{species\_93}} \text{species\_94} + \text{species\_35}$	
72	reaction_72	reaction25_9	$\text{species\_42} + \text{species\_94} \xrightleftharpoons{\text{species\_42, species\_94, species\_95}} \text{species\_95}$	
73	reaction_73	reaction26_9	$\text{species\_95} \xrightarrow{\text{species\_95}} \text{species\_102} + \text{species\_41}$	
74	reaction_74	reaction28_9	$\text{species\_96} + \text{species\_44} \xrightarrow{\text{species\_96, species\_44}} \text{species\_97}$	
75	reaction_75	reaction29_9	$\text{species\_97} \xrightarrow{\text{species\_97}} \text{species\_92} + \text{species\_43} + \text{species\_45}$	
76	reaction_76	reaction22_10	$\text{species\_40} + \text{species\_98} \xrightleftharpoons{\text{species\_40, species\_98, species\_99}} \text{species\_99}$	
77	reaction_77	reaction23_10	$\text{species\_99} \xrightarrow{\text{species\_99}} \text{species\_100} + \text{species\_35}$	

№	Id	Name	Reaction Equation	SBO
78	reaction_78	reaction25_10	species_42 + species_100 $\xrightleftharpoons{\text{species\_42, species\_100, species\_101}}$ species_101	
79	reaction_79	reaction26_10	species_101 $\xrightarrow{\text{species\_101}}$ species_108 + species_41	
80	reaction_80	reaction28_10	species_102 + species_44 $\xrightarrow{\text{species\_102, species\_44}}$ species_103	
81	reaction_81	reaction29_10	species_103 $\xrightarrow{\text{species\_103}}$ species_98 + species_43 + species_45	
82	reaction_82	reaction22_11	species_40 + species_104 $\xrightleftharpoons{\text{species\_40, species\_104, species\_105}}$ species_105	
83	reaction_83	reaction23_11	species_105 $\xrightarrow{\text{species\_105}}$ species_106 + species_35	
84	reaction_84	reaction25_11	species_42 + species_106 $\xrightleftharpoons{\text{species\_42, species\_106, species\_107}}$ species_107	
85	reaction_85	reaction26_11	species_107 $\xrightarrow{\text{species\_107}}$ species_114 + species_41	
86	reaction_86	reaction28_11	species_108 + species_44 $\xrightarrow{\text{species\_108, species\_44}}$ species_109	
87	reaction_87	reaction29_11	species_109 $\xrightarrow{\text{species\_109}}$ species_104 + species_43 + species_45	
88	reaction_88	reaction22_12	species_40 + species_110 $\xrightleftharpoons{\text{species\_40, species\_110, species\_111}}$ species_111	
89	reaction_89	reaction23_12	species_111 $\xrightarrow{\text{species\_111}}$ species_112 + species_35	
90	reaction_90	reaction25_12	species_42 + species_112 $\xrightleftharpoons{\text{species\_42, species\_112, species\_113}}$ species_113	
91	reaction_91	reaction26_12	species_113 $\xrightarrow{\text{species\_113}}$ species_120 + species_41	
92	reaction_92	reaction28_12	species_114 + species_44 $\xrightarrow{\text{species\_114, species\_44}}$ species_115	
93	reaction_93	reaction29_12	species_115 $\xrightarrow{\text{species\_115}}$ species_110 + species_43 + species_45	
94	reaction_94	reaction22_13	species_40 + species_116 $\xrightleftharpoons{\text{species\_40, species\_116, species\_117}}$ species_117	

№	Id	Name	Reaction Equation	SBO
95	reaction_95	reaction23_13	$\text{species\_117} \xrightarrow{\text{species\_117}} \text{species\_118} + \text{species\_35}$	
96	reaction_96	reaction25_13	$\text{species\_42} + \text{species\_118} \xrightleftharpoons{\text{species\_42, species\_118, species\_119}} \text{species\_119}$	
97	reaction_97	reaction26_13	$\text{species\_119} \xrightarrow{\text{species\_119}} \text{species\_126} + \text{species\_41}$	
98	reaction_98	reaction28_13	$\text{species\_120} + \text{species\_44} \xrightarrow{\text{species\_120, species\_44}} \text{species\_121}$	
99	reaction_99	reaction29_13	$\text{species\_121} \xrightarrow{\text{species\_121}} \text{species\_116} +$ $\text{species\_43} + \text{species\_45}$	
100	reaction_100	reaction22_14	$\text{species\_40} + \text{species\_122} \xrightleftharpoons{\text{species\_40, species\_122, species\_123}} \text{species\_123}$	
101	reaction_101	reaction23_14	$\text{species\_123} \xrightarrow{\text{species\_123}} \text{species\_124} + \text{species\_35}$	
102	reaction_102	reaction25_14	$\text{species\_42} + \text{species\_124} \xrightleftharpoons{\text{species\_42, species\_124, species\_125}} \text{species\_125}$	
103	reaction_103	reaction26_14	$\text{species\_125} \xrightarrow{\text{species\_125}} \text{species\_132} + \text{species\_41}$	
104	reaction_104	reaction28_14	$\text{species\_126} + \text{species\_44} \xrightarrow{\text{species\_126, species\_44}} \text{species\_127}$	
105	reaction_105	reaction29_14	$\text{species\_127} \xrightarrow{\text{species\_127}} \text{species\_122} +$ $\text{species\_43} + \text{species\_45}$	
106	reaction_106	reaction22_15	$\text{species\_40} + \text{species\_128} \xrightleftharpoons{\text{species\_40, species\_128, species\_129}} \text{species\_129}$	
107	reaction_107	reaction23_15	$\text{species\_129} \xrightarrow{\text{species\_129}} \text{species\_130} + \text{species\_35}$	
108	reaction_108	reaction25_15	$\text{species\_42} + \text{species\_130} \xrightleftharpoons{\text{species\_42, species\_130, species\_131}} \text{species\_131}$	
109	reaction_109	reaction26_15	$\text{species\_131} \xrightarrow{\text{species\_131}} \text{species\_138} + \text{species\_41}$	
110	reaction_110	reaction28_15	$\text{species\_132} + \text{species\_44} \xrightarrow{\text{species\_132, species\_44}} \text{species\_133}$	
111	reaction_111	reaction29_15	$\text{species\_133} \xrightarrow{\text{species\_133}} \text{species\_128} +$ $\text{species\_43} + \text{species\_45}$	

The SBO column values: species_119 (row 96), species_123 (row 100), species_125 (row 102), species_129 (row 106), species_131 (row 108).

№	Id	Name	Reaction Equation	SBO
112	reaction_112	reaction22_16	species_40 + species_134 $\xrightleftharpoons{\text{species\_40, species\_134, species\_135}}$ species_135	
113	reaction_113	reaction23_16	species_135 $\xrightarrow{\text{species\_135}}$ species_136 + species_35	
114	reaction_114	reaction25_16	species_42 + species_136 $\xrightleftharpoons{\text{species\_42, species\_136, species\_137}}$ species_137	
115	reaction_115	reaction26_16	species_137 $\xrightarrow{\text{species\_137}}$ species_144 + species_41	
116	reaction_116	reaction28_16	species_138 + species_44 $\xrightarrow{\text{species\_138, species\_44}}$ species_139	
117	reaction_117	reaction29_16	species_139 $\xrightarrow{\text{species\_139}}$ species_134 + species_43 + species_45	
118	reaction_118	reaction22_17	species_40 + species_140 $\xrightleftharpoons{\text{species\_40, species\_140, species\_141}}$ species_141	
119	reaction_119	reaction23_17	species_141 $\xrightarrow{\text{species\_141}}$ species_142 + species_35	
120	reaction_120	reaction25_17	species_42 + species_142 $\xrightleftharpoons{\text{species\_42, species\_142, species\_143}}$ species_143	
121	reaction_121	reaction26_17	species_143 $\xrightarrow{\text{species\_143}}$ species_150 + species_41	
122	reaction_122	reaction28_17	species_144 + species_44 $\xrightarrow{\text{species\_144, species\_44}}$ species_145	
123	reaction_123	reaction29_17	species_145 $\xrightarrow{\text{species\_145}}$ species_140 + species_43 + species_45	
124	reaction_124	reaction22_18	species_40 + species_146 $\xrightleftharpoons{\text{species\_40, species\_146, species\_147}}$ species_147	
125	reaction_125	reaction23_18	species_147 $\xrightarrow{\text{species\_147}}$ species_148 + species_35	
126	reaction_126	reaction25_18	species_42 + species_148 $\xrightleftharpoons{\text{species\_42, species\_148, species\_149}}$ species_149	
127	reaction_127	reaction26_18	species_149 $\xrightarrow{\text{species\_149}}$ species_156 + species_41	
128	reaction_128	reaction28_18	species_150 + species_44 $\xrightarrow{\text{species\_150, species\_44}}$ species_151	

№	Id	Name	Reaction Equation	SBO
129	reaction_129	reaction29_18	species_151 $\xrightarrow{\text{species\_151}}$ species_146 species_43 + species_45	+
130	reaction_130	reaction22_19	species_40 + species_152 $\xrightleftharpoons{\text{species\_40, species\_152, species\_153}}$ species_153	
131	reaction_131	reaction23_19	species_153 $\xrightarrow{\text{species\_153}}$ species_154 + species_35	
132	reaction_132	reaction25_19	species_42 + species_154 $\xrightleftharpoons{\text{species\_42, species\_154, species\_155}}$ species_155	
133	reaction_133	reaction26_19	species_155 $\xrightarrow{\text{species\_155}}$ species_159 + species_41	
134	reaction_134	reaction28_19	species_156 + species_44 $\xrightarrow{\text{species\_156, species\_44}}$ species_157	
135	reaction_135	reaction29_19	species_157 $\xrightarrow{\text{species\_157}}$ species_152 species_43 + species_45	+
136	reaction_136	reaction28_20	species_159 + species_44 $\xrightarrow{\text{species\_159, species\_44}}$ species_160	
137	reaction_137	reaction29_20	species_160 $\xrightarrow{\text{species\_160}}$ species_158 species_43 + species_45	+
138	reaction_138	reaction30	species_161 $\xrightleftharpoons{\text{species\_161, species\_162}}$ species_162	
139	reaction_139	reaction31	species_163 + species_162 $\xrightleftharpoons{\text{species\_163, species\_162, species\_164}}$ species_164	
140	reaction_140	reaction32	species_164 + species_158 $\xrightarrow{\text{species\_164, species\_158}}$ species_165	
141	reaction_141	reaction33	species_165 $\xrightarrow{\text{species\_165}}$ species_13 + species_34 + species_163 + species_161	

9.1 Reaction `reaction_1`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction1

Reaction equation

$$\text{species\_1} + \text{species\_2} \xrightleftharpoons{\text{species\_1, species\_2, species\_3}} \text{species\_3} \tag{6}$$
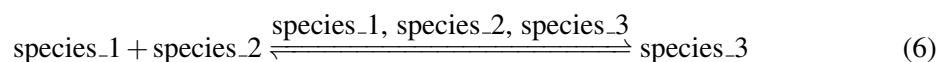
Reactants

Table 6: Properties of each reactant.

Id	Name	SBO
species_1	eIF2_GDP	
species_2	eIF2B	

Modifiers

Table 7: Properties of each modifier.

Id	Name	SBO
species_1	eIF2_GDP	
species_2	eIF2B	
species_3	eIF2_GDP_eIF2B	

Product

Table 8: Properties of each product.

Id	Name	SBO
species_3	eIF2_GDP_eIF2B	

Kinetic Law

Derived unit contains undeclared units

$$v_1 = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_1}] \cdot [\text{species\_2}] - \text{k2} \cdot [\text{species\_3}]) \tag{7}$$

Table 9: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$1.96096 \cdot 10^7$		☑
k2	k2		34.803		☑

9.2 Reaction `reaction_2`

This is a reversible reaction of one reactant forming two products influenced by three modifiers.

Name reaction2

Reaction equation

$$\text{species\_3} \xrightleftharpoons{\text{species\_3, species\_4, species\_2}} \text{species\_4} + \text{species\_2} \tag{8}$$
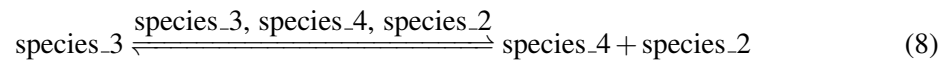
Reactant

Table 10: Properties of each reactant.

Id	Name	SBO
species_3	eIF2_GDP_eIF2B	

Modifiers

Table 11: Properties of each modifier.

Id	Name	SBO
species_3	eIF2_GDP_eIF2B	
species_4	eIF2_GTP	
species_2	eIF2B	

Products

Table 12: Properties of each product.

Id	Name	SBO
species_4	eIF2_GTP	
species_2	eIF2B	

Kinetic Law

Derived unit contains undeclared units

$$v_2 = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_3}] - \text{k2} \cdot [\text{species\_4}] \cdot [\text{species\_2}]) \qquad (9)$$

Table 13: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		533.260		☑
k2	k2		3.977		☑

9.3 Reaction `reaction_3`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction3

Reaction equation

$$\text{species\_4} + \text{species\_5} \xrightleftharpoons{\text{species\_4, species\_5, species\_6}} \text{species\_6} \qquad (10)$$

Reactants

Table 14: Properties of each reactant.

Id	Name	SBO
species_4	eIF2_GTP	
species_5	Met-tRNA	

Modifiers

Table 15: Properties of each modifier.

Id	Name	SBO
species_4	eIF2_GTP	
species_5	Met-tRNA	
species_6	eIF2_GTP_Met-tRNA	

Product

Table 16: Properties of each product.

Id	Name	SBO
species_6	eIF2_GTP_Met-tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_3 = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot (\mathrm{k1} \cdot [\mathrm{species\_4}] \cdot [\mathrm{species\_5}] - \mathrm{k2} \cdot [\mathrm{species\_6}]) \qquad (11)$$

Table 17: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		104798.000		☑
k2	k2		6.330		☑

9.4 Reaction reaction_4

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction4

Reaction equation

$$\mathrm{species\_7} + \mathrm{species\_8} \xrightleftharpoons{\mathrm{species\_7,\ species\_8,\ species\_9}} \mathrm{species\_9} \qquad (12)$$

Reactants

Table 18: Properties of each reactant.

Id	Name	SBO
species_7	eIF3	
species_8	eIF5	

Modifiers

Table 19: Properties of each modifier.

Id	Name	SBO
species_7	eIF3	

Id	Name	SBO
species_8	eIF5	
species_9	eIF3_eIF5	

Product

Table 20: Properties of each product.

Id	Name	SBO
species_9	eIF3_eIF5	

Kinetic Law

Derived unit contains undeclared units

$$v_4 = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot (\mathrm{k1} \cdot [\mathrm{species\_7}] \cdot [\mathrm{species\_8}] - \mathrm{k2} \cdot [\mathrm{species\_9}]) \qquad (13)$$

Table 21: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$2.00245 \cdot 10^7$		☑
k2	k2		0.407		☑

9.5 Reaction `reaction_5`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction5

Reaction equation

$$\mathrm{species\_6} + \mathrm{species\_9} \xrightleftharpoons{\mathrm{species\_6,\ species\_9,\ species\_10}} \mathrm{species\_10} \qquad (14)$$
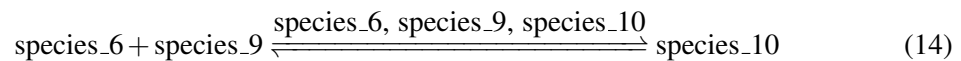
Reactants

Table 22: Properties of each reactant.

Id	Name	SBO
species_6	eIF2_GTP_Met-tRNA	
species_9	eIF3_eIF5	

Modifiers

Table 23: Properties of each modifier.

Id	Name	SBO
species_6	eIF2_GTP_Met-tRNA	
species_9	eIF3_eIF5	
species_10	eIF3_eIF5_eIF2_GTP_Met-tRNA	

Product

Table 24: Properties of each product.

Id	Name	SBO
species_10	eIF3_eIF5_eIF2_GTP_Met-tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_5 = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot (\mathrm{k1} \cdot [\mathrm{species\_6}] \cdot [\mathrm{species\_9}] - \mathrm{k2} \cdot [\mathrm{species\_10}]) \qquad (15)$$

Table 25: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$1.60265 \cdot 10^8$		☑
k2	k2		57.185		☑

9.6 Reaction `reaction_6`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction6

Reaction equation

$$\mathrm{species\_11} + \mathrm{species\_10} \xrightleftharpoons{\mathrm{species\_11,\ species\_10,\ species\_12}} \mathrm{species\_12} \qquad (16)$$

Reactants

Table 26: Properties of each reactant.

Id	Name	SBO
species_11	eIF1	
species_10	eIF3_eIF5_eIF2_GTP_Met-tRNA	

Modifiers

Table 27: Properties of each modifier.

Id	Name	SBO
species_11	eIF1	
species_10	eIF3_eIF5_eIF2_GTP_Met-tRNA	
species_12	eIF1_eIF3_eIF5_eIF2_GTP_Met-tRNA	

Product

Table 28: Properties of each product.

Id	Name	SBO
species_12	eIF1_eIF3_eIF5_eIF2_GTP_Met-tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_6 = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_11}] \cdot [\text{species\_10}] - \text{k2} \cdot [\text{species\_12}]) \quad (17)$$

Table 29: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		3865650.000		☑
k2	k2		31.197		☑

9.7 Reaction reaction_7

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

Name reaction7

Reaction equation

$$\text{species\_13} + \text{species\_14} \xrightarrow{\text{species\_13, species\_14}} \text{species\_15} \qquad (18)$$
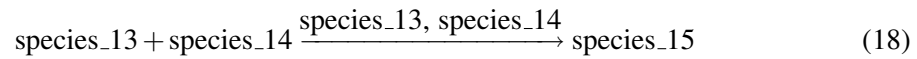
Reactants

Table 30: Properties of each reactant.

Id	Name	SBO
species_13	40S	
species_14	eIF1A	

Modifiers

Table 31: Properties of each modifier.

Id	Name	SBO
species_13	40S	
species_14	eIF1A	

Product

Table 32: Properties of each product.

Id	Name	SBO
species_15	40S_eIF1A	

Kinetic Law

Derived unit contains undeclared units

$$v_7 = \text{vol}\,(\text{compartment\_1}) \cdot \text{k1} \cdot [\text{species\_13}] \cdot [\text{species\_14}] \qquad (19)$$

Table 33: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		814356.0		☑

9.8 Reaction `reaction_8`

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

Name reaction8

Reaction equation

$$\text{species\_12} + \text{species\_15} \xrightarrow{\text{species\_12, species\_15}} \text{species\_16} \tag{20}$$
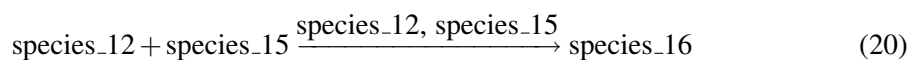
Reactants

Table 34: Properties of each reactant.

Id	Name	SBO
species_12	eIF1_eIF3_eIF5_eIF2_GTP_Met-tRNA	
species_15	40S_eIF1A	

Modifiers

Table 35: Properties of each modifier.

Id	Name	SBO
species_12	eIF1_eIF3_eIF5_eIF2_GTP_Met-tRNA	
species_15	40S_eIF1A	

Product

Table 36: Properties of each product.

Id	Name	SBO
species_16	43S	

Kinetic Law

Derived unit contains undeclared units

$$v_8 = \text{vol}\,(\text{compartment\_1}) \cdot \text{k1} \cdot [\text{species\_12}] \cdot [\text{species\_15}] \tag{21}$$

Table 37: Properties of each parameter.

| Id	Name	SBO	Value	Unit	Constant
k1	k1		$1.97254 \cdot 10^7$		☑

9.9 Reaction `reaction_9`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction9

Reaction equation

$$\text{species\_17} + \text{species\_18} \xrightleftharpoons{\text{species\_17, species\_18, species\_19}} \text{species\_19} \tag{22}$$

Reactants

Table 38: Properties of each reactant.

Id	Name	SBO
species_17	eIF4E	
species_18	eIF4G	

Modifiers

Table 39: Properties of each modifier.

Id	Name	SBO
species_17	eIF4E	
species_18	eIF4G	
species_19	eIF4E_eIF4G	

Product

Table 40: Properties of each product.

Id	Name	SBO
species_19	eIF4E_eIF4G	

Kinetic Law

Derived unit contains undeclared units

$$v_9 = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot (\mathrm{k1} \cdot [\mathrm{species\_17}] \cdot [\mathrm{species\_18}] - \mathrm{k2} \cdot [\mathrm{species\_19}]) \quad (23)$$

Table 41: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$4.33274 \cdot 10^7$		☑
k2	k2		1977.920		☑

9.10 Reaction `reaction_10`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction10

Reaction equation

$$\mathrm{species\_20} + \mathrm{species\_21} \xrightleftharpoons{\mathrm{species\_20,\ species\_21,\ species\_22}} \mathrm{species\_22} \quad (24)$$

Reactants

Table 42: Properties of each reactant.

Id	Name	SBO
species_20	mRNA_cap	
species_21	Pab1	

Modifiers

Table 43: Properties of each modifier.

Id	Name	SBO
species_20	mRNA_cap	
species_21	Pab1	
species_22	mRNA_Pab1	

Product

Table 44: Properties of each product.

Id	Name	SBO
species_22	mRNA_Pab1	

Kinetic Law

Derived unit contains undeclared units

$$v_{10} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_20}] \cdot [\text{species\_21}] - \text{k2} \cdot [\text{species\_22}]) \quad (25)$$

Table 45: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		5026500.000		☑
k2	k2		0.008		☑

9.11 Reaction `reaction_11`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction11

Reaction equation

$$\text{species\_19} + \text{species\_22} \xrightleftharpoons{\text{species\_19, species\_22, species\_23}} \text{species\_23} \quad (26)$$

Reactants

Table 46: Properties of each reactant.

Id	Name	SBO
species_19	eIF4E_eIF4G	
species_22	mRNA_Pab1	

Modifiers

Table 47: Properties of each modifier.

Id	Name	SBO
species_19	eIF4E_eIF4G	

Id	Name	SBO
species_22	mRNA_Pab1	
species_23	eIF4E_eIF4G_mRNA_Pab1	

Product

Table 48: Properties of each product.

Id	Name	SBO
species_23	eIF4E_eIF4G_mRNA_Pab1	

Kinetic Law

Derived unit contains undeclared units

$$v_{11} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_19}] \cdot [\text{species\_22}] - \text{k2} \cdot [\text{species\_23}]) \quad (27)$$

Table 49: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$5.79912 \cdot 10^7$		☑
k2	k2		2.700		☑

9.12 Reaction `reaction_12`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction12

Reaction equation

$$\text{species\_24} + \text{species\_23} \xrightleftharpoons{\text{species\_24, species\_23, species\_166}} \text{species\_166} \quad (28)$$

Reactants

Table 50: Properties of each reactant.

Id	Name	SBO
species_24	eIF4A	
species_23	eIF4E_eIF4G_mRNA_Pab1	

Modifiers

Table 51: Properties of each modifier.

Id	Name	SBO
species_24	eIF4A	
species_23	eIF4E_eIF4G_mRNA_Pab1	
species_166	eIF4A_eIF4E_eIF4G_mRNA_Pab1	

Product

Table 52: Properties of each product.

Id	Name	SBO
species_166	eIF4A_eIF4E_eIF4G_mRNA_Pab1	

Kinetic Law

Derived unit contains undeclared units

$$v_{12} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_24}] \cdot [\text{species\_23}] - \text{k2} \cdot [\text{species\_166}]) \quad (29)$$

Table 53: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		307831.000		☑
k2	k2		2.382		☑

9.13 Reaction reaction_13

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction13

Reaction equation

$$\text{species\_25} + \text{species\_166} \xrightleftharpoons{\text{species\_25, species\_166, species\_27}} \text{species\_27} \quad (30)$$

Reactants

Table 54: Properties of each reactant.

Id	Name	SBO
species_25	eIF4B	
species_166	eIF4A_eIF4E_eIF4G_mRNA_Pab1	

Modifiers

Table 55: Properties of each modifier.

Id	Name	SBO
species_25	eIF4B	
species_166	eIF4A_eIF4E_eIF4G_mRNA_Pab1	
species_27	eIF4E_eIF4G_mRNA_Pab1_eIF4A_eIF4B	

Product

Table 56: Properties of each product.

Id	Name	SBO
species_27	eIF4E_eIF4G_mRNA_Pab1_eIF4A_eIF4B	

Kinetic Law

Derived unit contains undeclared units

$$v_{13} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_25}] \cdot [\text{species\_166}] - \text{k2} \cdot [\text{species\_27}]) \quad (31)$$

Table 57: Properties of each parameter.

| Id	Name	SBO	Value	Unit	Constant
k1	k1		$3.5208 \cdot 10^{14}$		☑
k2	k2		0.785		☑

9.14 Reaction `reaction_14`

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

Name reaction14

Reaction equation

$$\text{species\_16} + \text{species\_27} \xrightarrow{\text{species\_16, species\_27}} \text{species\_28} \qquad (32)$$
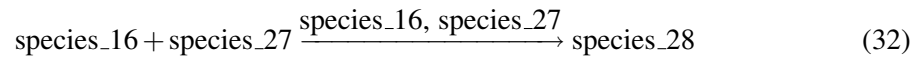
Reactants

Table 58: Properties of each reactant.

Id	Name	SBO
species_16	43S	
species_27	eIF4E_eIF4G_mRNA_Pab1_eIF4A_eIF4B	

Modifiers

Table 59: Properties of each modifier.

Id	Name	SBO
species_16	43S	
species_27	eIF4E_eIF4G_mRNA_Pab1_eIF4A_eIF4B	

Product

Table 60: Properties of each product.

Id	Name	SBO
species_28	48S	

Kinetic Law

Derived unit contains undeclared units

$$v_{14} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{k1} \cdot [\text{species\_16}] \cdot [\text{species\_27}] \qquad (33)$$

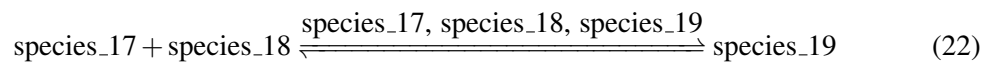Table 61: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$1.06204 \cdot 10^{9}$		☑

9.15 Reaction `reaction_15`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction15

Reaction equation

$$\text{species\_28} + \text{species\_29} \xrightleftharpoons{\text{species\_28, species\_29, species\_30}} \text{species\_30} \qquad (34)$$
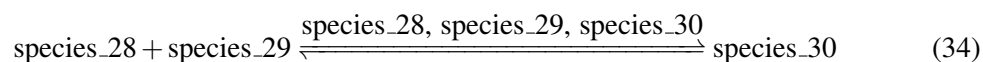
Reactants

Table 62: Properties of each reactant.

Id	Name	SBO
species_28	48S	
species_29	Ded1	

Modifiers

Table 63: Properties of each modifier.

Id	Name	SBO
species_28	48S	
species_29	Ded1	
species_30	48S_Ded1	

Product

Table 64: Properties of each product.

Id	Name	SBO
species_30	48S_Ded1	

Kinetic Law

Derived unit contains undeclared units

$$v_{15} = \text{vol}\left(\text{compartment\_1}\right) \cdot \left(\text{k1} \cdot [\text{species\_28}] \cdot [\text{species\_29}] - \text{k2} \cdot [\text{species\_30}]\right) \qquad (35)$$

Table 65: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$8.7134 \cdot 10^{10}$		☑
k2	k2		1.240		☑

9.16 Reaction `reaction_16`

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

Name reaction16

Reaction equation

$$\text{species\_31} \xrightleftharpoons{\text{species\_31, species\_32}} \text{species\_32} \tag{36}$$
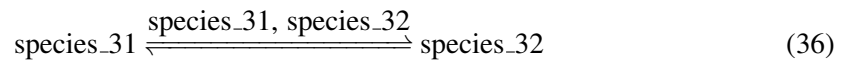
Reactant

Table 66: Properties of each reactant.

Id	Name	SBO
species_31	eIF5B_GDP	

Modifiers

Table 67: Properties of each modifier.

Id	Name	SBO
species_31	eIF5B_GDP	
species_32	eIF5B_GTP	

Product

Table 68: Properties of each product.

Id	Name	SBO
species_32	eIF5B_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{16} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_31}] - \text{k2} \cdot [\text{species\_32}]) \tag{37}$$

Table 69: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		304.768		☑
k2	k2		45.408		☑

9.17 Reaction `reaction_17`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction17

Reaction equation

$$\text{species\_30} + \text{species\_32} \xrightleftharpoons{\text{species\_30, species\_32, species\_33}} \text{species\_33} \tag{38}$$
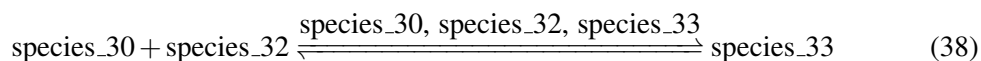
Reactants

Table 70: Properties of each reactant.

Id	Name	SBO
species_30	48S_Ded1	
species_32	eIF5B_GTP	

Modifiers

Table 71: Properties of each modifier.

Id	Name	SBO
species_30	48S_Ded1	
species_32	eIF5B_GTP	
species_33	48S_Ded1_eIF5B_GTP	

Product

Table 72: Properties of each product.

Id	Name	SBO
species_33	48S_Ded1_eIF5B_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{17} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_30}] \cdot [\text{species\_32}] - \text{k2} \cdot [\text{species\_33}]) \quad (39)$$

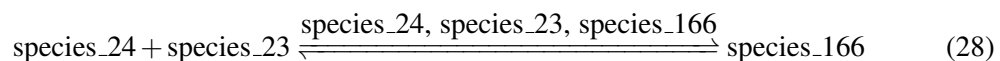Table 73: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$5.61005 \cdot 10^8$		☑
k2	k2		47.822		☑

9.18 Reaction `reaction_18`

This is an irreversible reaction of two reactants forming 14 products influenced by 178 modifiers.

Name reaction18

Reaction equation

$$\text{species\_34} + \text{species\_33} \xrightarrow{\text{species\_46, species\_47, species\_48, species\_49, species\_50, species\_51, species\_52, species\_}}$$

$$(40)$$

Reactants

Table 74: Properties of each reactant.

Id	Name	SBO
species_34	60S	
species_33	48S_Ded1_eIF5B_GTP	

Modifiers

Table 75: Properties of each modifier.

Id	Name	SBO
species_46	80S_1	
species_47	80S_aa-tRNA_eEF1A_GTP_1	
species_48	80S_aa-tRNA_1	
species_49	80S_aa-tRNA_eEF2_GTP_1	
species_50	80S_2	
species_51	80S_aa-tRNA_eEF1A_GTP_2	
species_52	80S_aa-tRNA_2	
species_53	80S_aa-tRNA_eEF2_GTP_2	
species_54	80S_tRNA_2	
species_55	80S_tRNA_eEF3_GTP_2	
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_60	80S_tRNA_3	
species_61	80S_tRNA_eEF3_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	

Id	Name	SBO
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	

Id	Name	SBO
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_34	60S	
species_33	48S_Ded1_eIF5B_GTP	
species_46	80S_1	
species_47	80S_aa-tRNA_eEF1A_GTP_1	
species_48	80S_aa-tRNA_1	
species_49	80S_aa-tRNA_eEF2_GTP_1	
species_50	80S_2	
species_51	80S_aa-tRNA_eEF1A_GTP_2	
species_52	80S_aa-tRNA_2	
species_53	80S_aa-tRNA_eEF2_GTP_2	
species_54	80S_tRNA_2	
species_55	80S_tRNA_eEF3_GTP_2	
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_60	80S_tRNA_3	
species_61	80S_tRNA_eEF3_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	

Id	Name	SBO
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	

Id	Name	SBO
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	

Products

Table 76: Properties of each product.

Id	Name	SBO
species_46	80S_1	
species_11	eIF1	
species_14	eIF1A	
species_1	eIF2_GDP	
species_7	eIF3	
species_24	eIF4A	
species_25	eIF4B	
species_17	eIF4E	
species_18	eIF4G	
species_8	eIF5	
species_31	eIF5B_GDP	
species_21	Pab1	
species_20	mRNA_cap	
species_29	Ded1	

Kinetic Law

Derived unit contains undeclared units

$$v_{18} = \text{vol}\,(\text{compartment\_1}) \cdot \text{function\_1}\,(\text{k}, [\text{species\_34}], [\text{species\_33}], \text{parameter\_1}, [\text{species\_46}],$$
$$[\text{species\_47}], [\text{species\_48}], [\text{species\_49}], [\text{species\_50}], [\text{species\_51}], [\text{species\_52}],$$
$$[\text{species\_53}], [\text{species\_54}], [\text{species\_55}], [\text{species\_56}], [\text{species\_57}], [\text{species\_58}],$$
$$[\text{species\_59}], [\text{species\_60}], [\text{species\_61}], [\text{species\_62}], [\text{species\_63}], [\text{species\_64}],$$
$$[\text{species\_65}], [\text{species\_66}], [\text{species\_67}], [\text{species\_68}], [\text{species\_69}], [\text{species\_70}],$$
$$[\text{species\_71}], [\text{species\_72}], [\text{species\_73}], [\text{species\_74}], [\text{species\_75}], [\text{species\_76}],$$
$$[\text{species\_77}], [\text{species\_78}], [\text{species\_79}], [\text{species\_80}], [\text{species\_81}], [\text{species\_82}],$$
$$[\text{species\_83}], [\text{species\_84}], [\text{species\_85}], [\text{species\_86}], [\text{species\_87}], [\text{species\_88}],$$
$$[\text{species\_89}], [\text{species\_90}], [\text{species\_91}], [\text{species\_92}], [\text{species\_93}], [\text{species\_94}],$$
$$[\text{species\_95}], [\text{species\_96}], [\text{species\_97}], [\text{species\_98}], [\text{species\_99}], [\text{species\_100}],$$
$$[\text{species\_101}], [\text{species\_102}], [\text{species\_103}], [\text{species\_104}], [\text{species\_105}], [\text{species\_106}],$$
$$[\text{species\_107}], [\text{species\_108}], [\text{species\_109}], [\text{species\_110}], [\text{species\_111}], [\text{species\_112}],$$
$$[\text{species\_113}], [\text{species\_114}], [\text{species\_115}], [\text{species\_116}], [\text{species\_117}], [\text{species\_118}],$$
$$[\text{species\_119}], [\text{species\_120}], [\text{species\_121}], [\text{species\_122}], [\text{species\_123}], [\text{species\_124}],$$
$$[\text{species\_125}], [\text{species\_126}], [\text{species\_127}], [\text{species\_128}], [\text{species\_129}], [\text{species\_130}],$$
$$[\text{species\_131}], [\text{species\_132}], [\text{species\_133}])$$
$$(41)$$

$$\text{function\_1}\,(\text{k}, \text{substrate1}, \text{substrate2}, \text{mRNA\_tot}, A1, B1, C1, D1, A2, B2, C2, D2, E2, F2, A3, B3,$$
$$C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6, F6, A7, B7,$$
$$C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10, C10, D10, E10, F10,$$
$$A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13, B13, C13, D13, E13, F13,$$
$$A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15) = \text{k} \cdot \text{substrate1} \cdot \text{substrate2}$$
$$\cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C3 + D3$$
$$+ E3 + F3 + A4 + B4 + C4 + D4 + E4 + F4 + A5 + B5 + C5 + D5 + E5 + F5 + A6 + B6 + C6$$
$$+ D6 + E6 + F6 + A7 + B7 + C7 + D7 + E7 + F7 + A8 + B8 + C8 + D8 + E8 + F8 + A9 + B9$$
$$+ C9 + D9 + E9 + F9 + A10 + B10 + C10 + D10 + E10 + F10 + A11 + B11 + C11 + D11$$
$$+ E11 + F11 + A12 + B12 + C12 + D12 + E12 + F12 + A13 + B13 + C13 + D13 + E13$$
$$+ F13 + A14 + B14 + C14 + D14 + E14 + F14 + A15 + B15 + C15 + D15 + E15 + F15))$$
$$(42)$$

$$\text{function\_1}\,(\text{k}, \text{substrate1}, \text{substrate2}, \text{mRNA\_tot}, A1, B1, C1, D1, A2, B2, C2, D2, E2, F2, A3, B3,$$
$$C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6, F6, A7, B7,$$
$$C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10, C10, D10, E10, F10,$$
$$A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13, B13, C13, D13, E13, F13,$$
$$A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15) = \text{k} \cdot \text{substrate1} \cdot \text{substrate2}$$
$$\cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C3 + D3$$
$$+ E3 + F3 + A4 + B4 + C4 + D4 + E4 + F4 + A5 + B5 + C5 + D5 + E5 + F5 + A6 + B6 + C6$$
$$+ D6 + E6 + F6 + A7 + B7 + C7 + D7 + E7 + F7 + A8 + B8 + C8 + D8 + E8 + F8 + A9 + B9$$
$$+ C9 + D9 + E9 + F9 + A10 + B10 + C10 + D10 + E10 + F10 + A11 + B11 + C11 + D11$$
$$+ E11 + F11 + A12 + B12 + C12 + D12 + E12 + F12 + A13 + B13 + C13 + D13 + E13$$
$$+ F13 + A14 + B14 + C14 + D14 + E14 + F14 + A15 + B15 + C15 + D15 + E15 + F15))$$
$$(43)$$

Table 77: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k	k		$1.3072 \cdot 10^{13}$		☑

9.19 Reaction `reaction_19`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction19

Reaction equation

$$\text{species\_35} + \text{species\_36} \xrightleftharpoons{\text{species\_35, species\_36, species\_37}} \text{species\_37} \tag{44}$$

Reactants

Table 78: Properties of each reactant.

Id	Name	SBO
species_35	eEF1A_GDP	
species_36	eEF1B	

Modifiers

Table 79: Properties of each modifier.

Id	Name	SBO
species_35	eEF1A_GDP	
species_36	eEF1B	
species_37	eEF1A_GDP_eEF1B	

Product

Table 80: Properties of each product.

Id	Name	SBO
species_37	eEF1A_GDP_eEF1B	

Kinetic Law

Derived unit contains undeclared units

$$v_{19} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_35}] \cdot [\text{species\_36}] - \text{k2} \cdot [\text{species\_37}]) \quad (45)$$

Table 81: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		1170250.000		☑
k2	k2		14.291		☑

9.20 Reaction `reaction_20`

This is a reversible reaction of one reactant forming two products influenced by three modifiers.

Name reaction20

Reaction equation

$$\text{species\_37} \xrightleftharpoons{\text{species\_37, species\_38, species\_36}} \text{species\_38} + \text{species\_36} \quad (46)$$
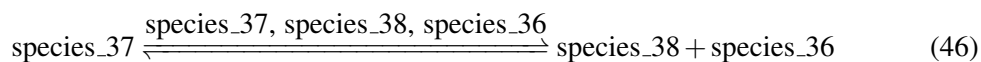
Reactant

Table 82: Properties of each reactant.

Id	Name	SBO
species_37	eEF1A_GDP_eEF1B	

Modifiers

Table 83: Properties of each modifier.

Id	Name	SBO
species_37	eEF1A_GDP_eEF1B	
species_38	eEF1A_GTP	
species_36	eEF1B	

Products

Table 84: Properties of each product.

Id	Name	SBO
species_38	eEF1A_GTP	
species_36	eEF1B	

Kinetic Law

Derived unit contains undeclared units

$$v_{20} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_37}] - \text{k2} \cdot [\text{species\_38}] \cdot [\text{species\_36}]) \quad (47)$$

Table 85: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		13.295		☑
k2	k2		$4.33541 \cdot 10^7$		☑

9.21 Reaction reaction_21

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction21

Reaction equation

$$\text{species\_38} + \text{species\_39} \xrightleftharpoons{\text{species\_38, species\_39, species\_40}} \text{species\_40} \quad (48)$$
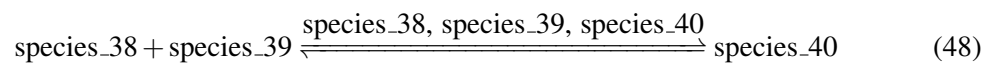
Reactants

Table 86: Properties of each reactant.

Id	Name	SBO
species_38	eEF1A_GTP	
species_39	aa-tRNA	

Modifiers

Table 87: Properties of each modifier.

Id	Name	SBO
species_38	eEF1A_GTP	
species_39	aa-tRNA	
species_40	aa-tRNA_eEF1A_GTP	

Product

Table 88: Properties of each product.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{21} = \text{vol} \left(\text{compartment\_1} \right) \cdot \left(k1 \cdot [\text{species\_38}] \cdot [\text{species\_39}] - k2 \cdot [\text{species\_40}] \right) \quad (49)$$

Table 89: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		39591.900		☑
k2	k2		$8.80234 \cdot 10^{-6}$		☑

9.22 Reaction reaction_22

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

Name reaction24

Reaction equation

$$\text{species\_41} \xrightleftharpoons{\text{species\_41, species\_42}} \text{species\_42} \quad (50)$$
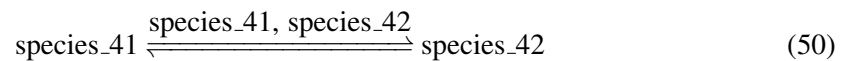
Reactant

Table 90: Properties of each reactant.

Id	Name	SBO
species_41	eEF2_GDP	

Modifiers

Table 91: Properties of each modifier.

Id	Name	SBO
species_41	eEF2_GDP	
species_42	eEF2_GTP	

Product

Table 92: Properties of each product.

Id	Name	SBO
species_42	eEF2_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{22} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_41}] - \text{k2} \cdot [\text{species\_42}]) \tag{51}$$

Table 93: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		1.805		☑
k2	k2		1.295		☑

9.23 Reaction reaction_23

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

Name reaction27

Reaction equation

$$\text{species\_43} \; \underset{\longleftarrow}{\overset{\text{species\_43, species\_44}}{\rightleftharpoons}} \; \text{species\_44} \tag{52}$$
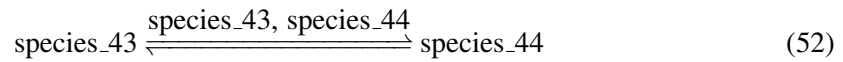
Reactant

Table 94: Properties of each reactant.

Id	Name	SBO
species_43	eEF3_GDP	

Modifiers

Table 95: Properties of each modifier.

Id	Name	SBO
species_43	eEF3_GDP	
species_44	eEF3_GTP	

Product

Table 96: Properties of each product.

Id	Name	SBO
species_44	eEF3_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{23} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_43}] - \text{k2} \cdot [\text{species\_44}]) \tag{53}$$

Table 97: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		93.600		☑
k2	k2		43714.400		☑

9.24 Reaction `reaction_24`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_1

Reaction equation

$$\text{species\_40} + \text{species\_46} \xrightleftharpoons{\text{species\_40, species\_46, species\_47}} \text{species\_47} \tag{54}$$
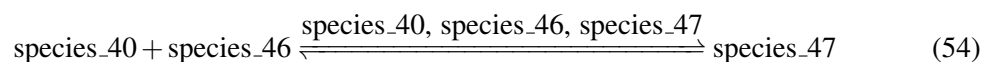
Reactants

Table 98: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_46	80S_1	

Modifiers

Table 99: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_46	80S_1	
species_47	80S_aa-tRNA_eEF1A_GTP_1	

Product

Table 100: Properties of each product.

Id	Name	SBO
species_47	80S_aa-tRNA_eEF1A_GTP_1	

Kinetic Law

Derived unit contains undeclared units

$$v_{24} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_46}] - \text{parameter\_3} \cdot [\text{species\_47}]) \tag{55}$$

9.25 Reaction `reaction_25`

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

Name reaction23_1

Reaction equation

$$\text{species\_47} \xrightarrow{\text{species\_47}} \text{species\_48} + \text{species\_35} \tag{56}$$
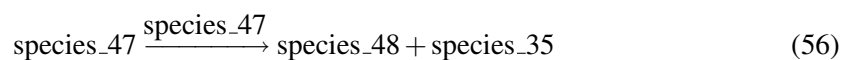
Reactant

Table 101: Properties of each reactant.

Id	Name	SBO
species_47	80S_aa-tRNA_eEF1A_GTP_1	

Modifier

Table 102: Properties of each modifier.

Id	Name	SBO
species_47	80S_aa-tRNA_eEF1A_GTP_1	

Products

Table 103: Properties of each product.

Id	Name	SBO
species_48	80S_aa-tRNA_1	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{25} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_47}] \tag{57}$$

9.26 Reaction `reaction_26`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_1

Reaction equation

$$\text{species\_42} + \text{species\_48} \xrightleftharpoons{\text{species\_42, species\_48, species\_49}} \text{species\_49} \qquad (58)$$
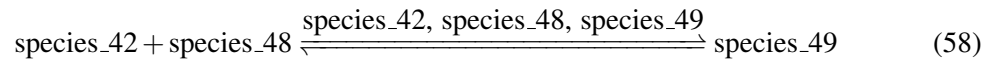
Reactants

Table 104: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_48	80S_aa-tRNA_1	

Modifiers

Table 105: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_48	80S_aa-tRNA_1	
species_49	80S_aa-tRNA_eEF2_GTP_1	

Product

Table 106: Properties of each product.

Id	Name	SBO
species_49	80S_aa-tRNA_eEF2_GTP_1	

Kinetic Law

Derived unit contains undeclared units

$$v_{26} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_48}] - \text{parameter\_6} \cdot [\text{species\_49}])$$

$$(59)$$

9.27 Reaction reaction_27

This is an irreversible reaction of one reactant forming two products influenced by 181 modifiers.

Name reaction26_1

Reaction equation

$$\text{species\_49} \xrightarrow{\text{species\_50, species\_51, species\_52, species\_53, species\_54, species\_55, species\_56, species\_57, species\_5}}$$

$$(60)$$
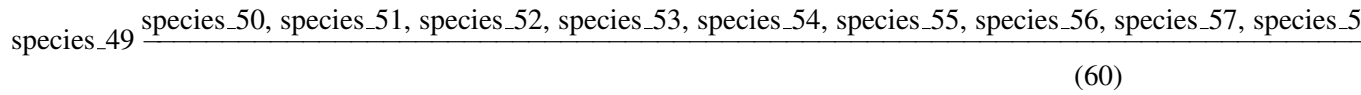
Reactant

Table 107: Properties of each reactant.

Id	Name	SBO
species_49	80S_aa-tRNA_eEF2_GTP_1	

Modifiers

Table 108: Properties of each modifier.

Id	Name	SBO
species_50	80S_2	
species_51	80S_aa-tRNA_eEF1A_GTP_2	
species_52	80S_aa-tRNA_2	
species_53	80S_aa-tRNA_eEF2_GTP_2	
species_54	80S_tRNA_2	
species_55	80S_tRNA_eEF3_GTP_2	
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_60	80S_tRNA_3	
species_61	80S_tRNA_eEF3_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	

Produced by SBML2LATEX

Id	Name	SBO
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	

Id	Name	SBO
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_49	80S_aa-tRNA_eEF2_GTP_1	
species_50	80S_2	
species_51	80S_aa-tRNA_eEF1A_GTP_2	
species_52	80S_aa-tRNA_2	
species_53	80S_aa-tRNA_eEF2_GTP_2	
species_54	80S_tRNA_2	
species_55	80S_tRNA_eEF3_GTP_2	
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_60	80S_tRNA_3	
species_61	80S_tRNA_eEF3_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	

Id	Name	SBO
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	

Id	Name	SBO
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	

Products

Table 109: Properties of each product.

Id	Name	SBO
species_54	80S_tRNA_2	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{27} = \text{vol}\,(\text{compartment\_1}) \cdot \text{function\_2}\,(\text{parameter\_7}, [\text{species\_49}], \text{parameter\_1}, [\text{species\_50}], \\
[\text{species\_51}], [\text{species\_52}], [\text{species\_53}], [\text{species\_54}], [\text{species\_55}], [\text{species\_56}], \\
[\text{species\_57}], [\text{species\_58}], [\text{species\_59}], [\text{species\_60}], [\text{species\_61}], [\text{species\_62}], \\
[\text{species\_63}], [\text{species\_64}], [\text{species\_65}], [\text{species\_66}], [\text{species\_67}], [\text{species\_68}], \\
[\text{species\_69}], [\text{species\_70}], [\text{species\_71}], [\text{species\_72}], [\text{species\_73}], [\text{species\_74}], \\
[\text{species\_75}], [\text{species\_76}], [\text{species\_77}], [\text{species\_78}], [\text{species\_79}], [\text{species\_80}], \\
[\text{species\_81}], [\text{species\_82}], [\text{species\_83}], [\text{species\_84}], [\text{species\_85}], [\text{species\_86}], \\
[\text{species\_87}], [\text{species\_88}], [\text{species\_89}], [\text{species\_90}], [\text{species\_91}], [\text{species\_92}], \\
[\text{species\_93}], [\text{species\_94}], [\text{species\_95}], [\text{species\_96}], [\text{species\_97}], [\text{species\_98}], \\
[\text{species\_99}], [\text{species\_100}], [\text{species\_101}], [\text{species\_102}], [\text{species\_103}], [\text{species\_104}], \\
[\text{species\_105}], [\text{species\_106}], [\text{species\_107}], [\text{species\_108}], [\text{species\_109}], [\text{species\_110}], \\
[\text{species\_111}], [\text{species\_112}], [\text{species\_113}], [\text{species\_114}], [\text{species\_115}], [\text{species\_116}], \\
[\text{species\_117}], [\text{species\_118}], [\text{species\_119}], [\text{species\_120}], [\text{species\_121}], [\text{species\_122}], \\
[\text{species\_123}], [\text{species\_124}], [\text{species\_125}], [\text{species\_126}], [\text{species\_127}], [\text{species\_128}], \\
[\text{species\_129}], [\text{species\_130}], [\text{species\_131}], [\text{species\_132}], [\text{species\_133}], [\text{species\_134}], \\
[\text{species\_135}], [\text{species\_136}], [\text{species\_137}], [\text{species\_138}], [\text{species\_139}])
\end{aligned}
\tag{61}
$$

$$
\begin{aligned}
&\text{function\_2}\,(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, \quad (62)\\
&B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,\\
&F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,\\
&C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,\\
&B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)\\
&= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 }
\end{aligned}
$$

$$
\begin{aligned}
&\text{function\_2}\,(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, \quad (63)\\
&B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,\\
&F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,\\
&C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,\\
&B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)\\
&= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 }
\end{aligned}
$$

9.28 Reaction `reaction_28`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_2

Reaction equation

$$\text{species\_40} + \text{species\_50} \xrightleftharpoons{\text{species\_40, species\_50, species\_51}} \text{species\_51} \qquad (64)$$
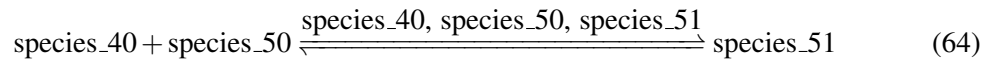
Reactants

Table 110: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_50	80S_2	

Modifiers

Table 111: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_50	80S_2	
species_51	80S_aa-tRNA_eEF1A_GTP_2	

Product

Table 112: Properties of each product.

Id	Name	SBO
species_51	80S_aa-tRNA_eEF1A_GTP_2	

Kinetic Law

Derived unit contains undeclared units

$$v_{28} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_50}] - \text{parameter\_3} \cdot [\text{species\_51}])$$
$$(65)$$

9.29 Reaction `reaction_29`

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

Name reaction23_2

Reaction equation

$$\text{species\_51} \xrightarrow{\text{species\_51}} \text{species\_52} + \text{species\_35} \qquad (66)$$
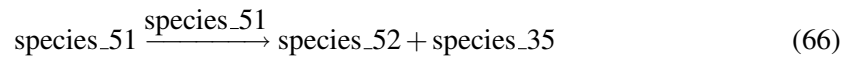
Reactant

Table 113: Properties of each reactant.

Id	Name	SBO
species_51	80S_aa-tRNA_eEF1A_GTP_2	

Modifier

Table 114: Properties of each modifier.

Id	Name	SBO
species_51	80S_aa-tRNA_eEF1A_GTP_2	

Products

Table 115: Properties of each product.

Id	Name	SBO
species_52	80S_aa-tRNA_2	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{29} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_51}] \qquad (67)$$

9.30 Reaction reaction_30

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_2

Reaction equation

$$\text{species\_42} + \text{species\_52} \xrightleftharpoons{\text{species\_42, species\_52, species\_53}} \text{species\_53} \qquad (68)$$
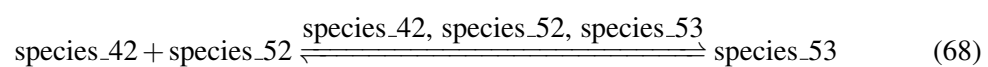
Reactants

Table 116: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_52	80S_aa-tRNA_2	

Modifiers

Table 117: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_52	80S_aa-tRNA_2	
species_53	80S_aa-tRNA_eEF2_GTP_2	

Product

Table 118: Properties of each product.

Id	Name	SBO
species_53	80S_aa-tRNA_eEF2_GTP_2	

Kinetic Law

Derived unit contains undeclared units

$$v_{30} = \text{vol}(\text{compartment\_1}) \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_52}] - \text{parameter\_6} \cdot [\text{species\_53}])$$

$$(69)$$

9.31 Reaction reaction_31

This is an irreversible reaction of one reactant forming two products influenced by 181 modifiers.

Name reaction26_2

Reaction equation

$$\text{species\_53} \xrightarrow{\text{species\_56, species\_57, species\_58, species\_59, species\_60, species\_61, species\_62, species\_63, species\_6}}$$

$$(70)$$

Reactant

Table 119: Properties of each reactant.

Id	Name	SBO
species_53	80S_aa-tRNA_eEF2_GTP_2	

Modifiers

Table 120: Properties of each modifier.

Id	Name	SBO
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_60	80S_tRNA_3	
species_61	80S_tRNA_eEF3_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	

Id	Name	SBO
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	

Id	Name	SBO
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	
species_53	80S_aa-tRNA_eEF2_GTP_2	
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_60	80S_tRNA_3	
species_61	80S_tRNA_eEF3_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	

Id	Name	SBO
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	

Id	Name	SBO
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	

Products

Table 121: Properties of each product.

Id	Name	SBO
species_60	80S_tRNA_3	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{31} = \text{vol}\,(\text{compartment\_1}) \cdot \text{function\_2}\,(\text{parameter\_7}, [\text{species\_53}], \text{parameter\_1}, [\text{species\_56}],$$
$$[\text{species\_57}], [\text{species\_58}], [\text{species\_59}], [\text{species\_60}], [\text{species\_61}], [\text{species\_62}],$$
$$[\text{species\_63}], [\text{species\_64}], [\text{species\_65}], [\text{species\_66}], [\text{species\_67}], [\text{species\_68}],$$
$$[\text{species\_69}], [\text{species\_70}], [\text{species\_71}], [\text{species\_72}], [\text{species\_73}], [\text{species\_74}],$$
$$[\text{species\_75}], [\text{species\_76}], [\text{species\_77}], [\text{species\_78}], [\text{species\_79}], [\text{species\_80}],$$
$$[\text{species\_81}], [\text{species\_82}], [\text{species\_83}], [\text{species\_84}], [\text{species\_85}], [\text{species\_86}],$$
$$[\text{species\_87}], [\text{species\_88}], [\text{species\_89}], [\text{species\_90}], [\text{species\_91}], [\text{species\_92}],$$
$$[\text{species\_93}], [\text{species\_94}], [\text{species\_95}], [\text{species\_96}], [\text{species\_97}], [\text{species\_98}],$$
$$[\text{species\_99}], [\text{species\_100}], [\text{species\_101}], [\text{species\_102}], [\text{species\_103}], [\text{species\_104}],$$
$$[\text{species\_105}], [\text{species\_106}], [\text{species\_107}], [\text{species\_108}], [\text{species\_109}], [\text{species\_110}],$$
$$[\text{species\_111}], [\text{species\_112}], [\text{species\_113}], [\text{species\_114}], [\text{species\_115}], [\text{species\_116}],$$
$$[\text{species\_117}], [\text{species\_118}], [\text{species\_119}], [\text{species\_120}], [\text{species\_121}], [\text{species\_122}],$$
$$[\text{species\_123}], [\text{species\_124}], [\text{species\_125}], [\text{species\_126}], [\text{species\_127}], [\text{species\_128}],$$
$$[\text{species\_129}], [\text{species\_130}], [\text{species\_131}], [\text{species\_132}], [\text{species\_133}], [\text{species\_134}],$$
$$[\text{species\_135}], [\text{species\_136}], [\text{species\_137}], [\text{species\_138}], [\text{species\_139}], [\text{species\_140}],$$
$$[\text{species\_141}], [\text{species\_142}], [\text{species\_143}], [\text{species\_144}], [\text{species\_145}])$$
$$\tag{71}$$

$$\text{function\_2}\,(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, \tag{72}$$
$$B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,$$
$$F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,$$
$$C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,$$
$$B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)$$
$$= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2}$$

$$\text{function\_2}\,(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, \tag{73}$$
$$B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,$$
$$F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,$$
$$C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,$$
$$B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)$$
$$= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2}$$

9.32 Reaction `reaction_32`

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

Name reaction28_2

Reaction equation

$$\text{species\_54} + \text{species\_44} \xrightarrow{\text{species\_54, species\_44}} \text{species\_55} \tag{74}$$
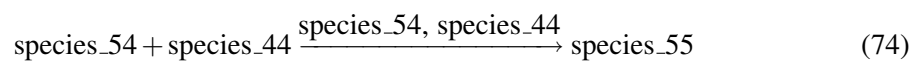
Reactants

Table 122: Properties of each reactant.

Id	Name	SBO
species_54	80S_tRNA_2	
species_44	eEF3_GTP	

Modifiers

Table 123: Properties of each modifier.

Id	Name	SBO
species_54	80S_tRNA_2	
species_44	eEF3_GTP	

Product

Table 124: Properties of each product.

Id	Name	SBO
species_55	80S_tRNA_eEF3_GTP_2	

Kinetic Law

Derived unit contains undeclared units

$$v_{32} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_54}] \cdot [\text{species\_44}] \tag{75}$$

9.33 Reaction `reaction_33`

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

Name reaction29_2

Reaction equation

$$\text{species\_55} \xrightarrow{\text{species\_55}} \text{species\_50} + \text{species\_43} + \text{species\_45} \tag{76}$$

Reactant

Table 125: Properties of each reactant.

Id	Name	SBO
species_55	80S_tRNA_eEF3_GTP_2	

Modifier

Table 126: Properties of each modifier.

Id	Name	SBO
species_55	80S_tRNA_eEF3_GTP_2	

Products

Table 127: Properties of each product.

Id	Name	SBO
species_50	80S_2	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{33} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_55}] \tag{77}$$

9.34 Reaction `reaction_34`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_3

Reaction equation

$$\text{species\_40} + \text{species\_56} \underset{}{\overset{\text{species\_40, species\_56, species\_57}}{\rightleftharpoons}} \text{species\_57} \tag{78}$$
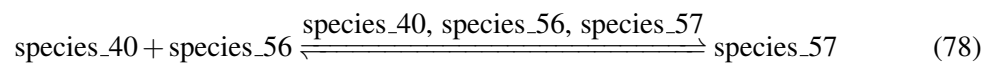
Reactants

Table 128: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_56	80S_3	

Modifiers

Table 129: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_56	80S_3	
species_57	80S_aa-tRNA_eEF1A_GTP_3	

Product

Table 130: Properties of each product.

Id	Name	SBO
species_57	80S_aa-tRNA_eEF1A_GTP_3	

Kinetic Law

Derived unit contains undeclared units

$$v_{34} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_56}] - \text{parameter\_3} \cdot [\text{species\_57}]) \tag{79}$$

9.35 Reaction `reaction_35`

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

Name reaction23_3

Reaction equation

$$\text{species\_57} \xrightarrow{\text{species\_57}} \text{species\_58} + \text{species\_35} \tag{80}$$
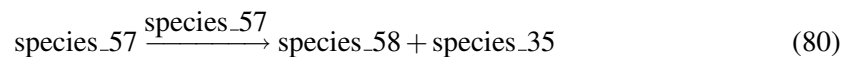
Reactant

Table 131: Properties of each reactant.

Id	Name	SBO
species_57	80S_aa-tRNA_eEF1A_GTP_3	

Modifier

Table 132: Properties of each modifier.

Id	Name	SBO
species_57	80S_aa-tRNA_eEF1A_GTP_3	

Products

Table 133: Properties of each product.

Id	Name	SBO
species_58	80S_aa-tRNA_3	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{35} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_57}] \tag{81}$$

9.36 Reaction reaction_36

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_3

Reaction equation

$$\text{species\_42} + \text{species\_58} \xrightarrow{\text{species\_42, species\_58, species\_59}} \text{species\_59} \tag{82}$$

Reactants

Table 134: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_58	80S_aa-tRNA_3	

Modifiers

Table 135: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_58	80S_aa-tRNA_3	
species_59	80S_aa-tRNA_eEF2_GTP_3	

Product

Table 136: Properties of each product.

Id	Name	SBO
species_59	80S_aa-tRNA_eEF2_GTP_3	

Kinetic Law

Derived unit contains undeclared units

$$v_{36} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_58}] - \text{parameter\_6} \cdot [\text{species\_59}])$$
(83)

9.37 Reaction reaction_37

This is an irreversible reaction of one reactant forming two products influenced by 181 modifiers.

Name reaction26_3

Reaction equation

$$\text{species\_59} \xrightarrow{\text{species\_62, species\_63, species\_64, species\_65, species\_66, species\_67, species\_68, species\_69, species\_7}}$$
(84)

Reactant

Table 137: Properties of each reactant.

Id	Name	SBO
species_59	80S_aa-tRNA_eEF2_GTP_3	

Modifiers

Table 138: Properties of each modifier.

Id	Name	SBO
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	

Produced by SBML2LATEX

Id	Name	SBO
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	

Id	Name	SBO
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	
species_148	80S_aa-tRNA_18	
species_149	80S_aa-tRNA_eEF2_GTP_18	
species_150	80S_tRNA_18	
species_151	80S_tRNA_eEF3_GTP_18	
species_59	80S_aa-tRNA_eEF2_GTP_3	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_66	80S_tRNA_4	
species_67	80S_tRNA_eEF3_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	

Id	Name	SBO
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	

Id	Name	SBO
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	
species_148	80S_aa-tRNA_18	
species_149	80S_aa-tRNA_eEF2_GTP_18	
species_150	80S_tRNA_18	
species_151	80S_tRNA_eEF3_GTP_18	

Products

Table 139: Properties of each product.

Id	Name	SBO
species_66	80S_tRNA_4	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

Produced by SBML2LATEX

$$v_{37} = \text{vol}\,(\text{compartment\_1}) \cdot \text{function\_2}\,(\text{parameter\_7}, [\text{species\_59}], \text{parameter\_1}, [\text{species\_62}],$$
$$[\text{species\_63}], [\text{species\_64}], [\text{species\_65}], [\text{species\_66}], [\text{species\_67}], [\text{species\_68}],$$
$$[\text{species\_69}], [\text{species\_70}], [\text{species\_71}], [\text{species\_72}], [\text{species\_73}], [\text{species\_74}],$$
$$[\text{species\_75}], [\text{species\_76}], [\text{species\_77}], [\text{species\_78}], [\text{species\_79}], [\text{species\_80}],$$
$$[\text{species\_81}], [\text{species\_82}], [\text{species\_83}], [\text{species\_84}], [\text{species\_85}], [\text{species\_86}],$$
$$[\text{species\_87}], [\text{species\_88}], [\text{species\_89}], [\text{species\_90}], [\text{species\_91}], [\text{species\_92}],$$
$$[\text{species\_93}], [\text{species\_94}], [\text{species\_95}], [\text{species\_96}], [\text{species\_97}], [\text{species\_98}],$$
$$[\text{species\_99}], [\text{species\_100}], [\text{species\_101}], [\text{species\_102}], [\text{species\_103}], [\text{species\_104}],$$
$$[\text{species\_105}], [\text{species\_106}], [\text{species\_107}], [\text{species\_108}], [\text{species\_109}], [\text{species\_110}],$$
$$[\text{species\_111}], [\text{species\_112}], [\text{species\_113}], [\text{species\_114}], [\text{species\_115}], [\text{species\_116}],$$
$$[\text{species\_117}], [\text{species\_118}], [\text{species\_119}], [\text{species\_120}], [\text{species\_121}], [\text{species\_122}],$$
$$[\text{species\_123}], [\text{species\_124}], [\text{species\_125}], [\text{species\_126}], [\text{species\_127}], [\text{species\_128}],$$
$$[\text{species\_129}], [\text{species\_130}], [\text{species\_131}], [\text{species\_132}], [\text{species\_133}], [\text{species\_134}],$$
$$[\text{species\_135}], [\text{species\_136}], [\text{species\_137}], [\text{species\_138}], [\text{species\_139}], [\text{species\_140}],$$
$$[\text{species\_141}], [\text{species\_142}], [\text{species\_143}], [\text{species\_144}], [\text{species\_145}], [\text{species\_146}],$$
$$[\text{species\_147}], [\text{species\_148}], [\text{species\_149}], [\text{species\_150}], [\text{species\_151}])$$
$$(85)$$

$\text{function\_2}\,(k, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, \qquad (86)$
$B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,$
$F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,$
$C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,$
$B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)$
$$= \frac{k \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + \cdots}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + \cdots}$$

$\text{function\_2}\,(k, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3, \qquad (87)$
$B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,$
$F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,$
$C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,$
$B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)$
$$= \frac{k \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + \cdots}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + \cdots}$$

9.38 Reaction `reaction_38`

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

Name reaction28_3

Reaction equation

$$\text{species\_60} + \text{species\_44} \xrightarrow{\text{species\_60, species\_44}} \text{species\_61} \qquad (88)$$
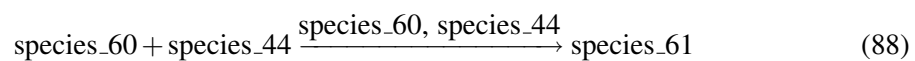
Reactants

Table 140: Properties of each reactant.

Id	Name	SBO
species_60	80S_tRNA_3	
species_44	eEF3_GTP	

Modifiers

Table 141: Properties of each modifier.

Id	Name	SBO
species_60	80S_tRNA_3	
species_44	eEF3_GTP	

Product

Table 142: Properties of each product.

Id	Name	SBO
species_61	80S_tRNA_eEF3_GTP_3	

Kinetic Law

Derived unit contains undeclared units

$$v_{38} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_60}] \cdot [\text{species\_44}] \tag{89}$$

9.39 Reaction `reaction_39`

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

Name reaction29_3

Reaction equation

$$\text{species\_61} \xrightarrow{\text{species\_61}} \text{species\_56} + \text{species\_43} + \text{species\_45} \tag{90}$$

Reactant

Table 143: Properties of each reactant.

Id	Name	SBO
species_61	80S_tRNA_eEF3_GTP_3	

Modifier

Table 144: Properties of each modifier.

Id	Name	SBO
species_61	80S_tRNA_eEF3_GTP_3	

Products

Table 145: Properties of each product.

Id	Name	SBO
species_56	80S_3	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{39} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_61}] \tag{91}$$

9.40 Reaction `reaction_40`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_4

Reaction equation

$$\text{species\_40} + \text{species\_62} \xrightleftharpoons{\text{species\_40, species\_62, species\_63}} \text{species\_63} \tag{92}$$
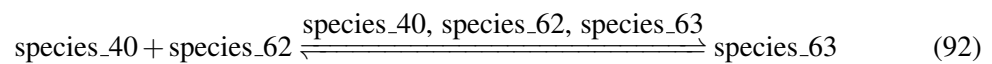
Reactants

Table 146: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_62	80S_4	

Modifiers

Table 147: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_62	80S_4	
species_63	80S_aa-tRNA_eEF1A_GTP_4	

Product

Table 148: Properties of each product.

Id	Name	SBO
species_63	80S_aa-tRNA_eEF1A_GTP_4	

Kinetic Law

Derived unit contains undeclared units

$$v_{40} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_62}] - \text{parameter\_3} \cdot [\text{species\_63}]) \tag{93}$$

9.41 Reaction `reaction_41`

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

Name reaction23_4

Reaction equation

$$\text{species\_63} \xrightarrow{\text{species\_63}} \text{species\_64} + \text{species\_35} \tag{94}$$
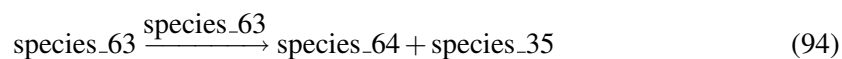
Reactant

Table 149: Properties of each reactant.

Id	Name	SBO
species_63	80S_aa-tRNA_eEF1A_GTP_4	

Modifier

Table 150: Properties of each modifier.

Id	Name	SBO
species_63	80S_aa-tRNA_eEF1A_GTP_4	

Products

Table 151: Properties of each product.

Id	Name	SBO
species_64	80S_aa-tRNA_4	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{41} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_4} \cdot [\mathrm{species\_63}] \tag{95}$$

9.42 Reaction `reaction_42`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_4

Reaction equation

$$\mathrm{species\_42} + \mathrm{species\_64} \xrightleftharpoons{\mathrm{species\_42,\ species\_64,\ species\_65}} \mathrm{species\_65} \tag{96}$$
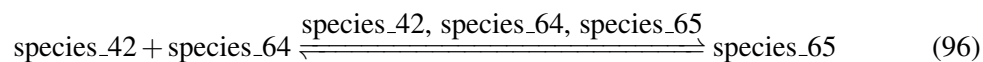
Reactants

Table 152: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_64	80S_aa-tRNA_4	

Modifiers

Table 153: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_64	80S_aa-tRNA_4	
species_65	80S_aa-tRNA_eEF2_GTP_4	

Product

Table 154: Properties of each product.

Id	Name	SBO
species_65	80S_aa-tRNA_eEF2_GTP_4	

Kinetic Law

Derived unit contains undeclared units

$$v_{42} = \mathrm{vol}\left(\mathrm{compartment\_1}\right) \cdot \left(\mathrm{parameter\_5} \cdot [\mathrm{species\_42}] \cdot [\mathrm{species\_64}] - \mathrm{parameter\_6} \cdot [\mathrm{species\_65}]\right) \tag{97}$$

9.43 Reaction `reaction_43`

This is an irreversible reaction of one reactant forming two products influenced by 181 modifiers.

Name reaction26_4

Reaction equation

$$\mathrm{species\_65} \xrightarrow{\mathrm{species\_68, species\_69, species\_70, species\_71, species\_72, species\_73, species\_74, species\_75, species\_7}} \tag{98}$$

Reactant

Table 155: Properties of each reactant.

Id	Name	SBO
species_65	80S_aa-tRNA_eEF2_GTP_4	

Modifiers

Table 156: Properties of each modifier.

Id	Name	SBO
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	

Id	Name	SBO
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	

Id	Name	SBO
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	
species_148	80S_aa-tRNA_18	
species_149	80S_aa-tRNA_eEF2_GTP_18	
species_150	80S_tRNA_18	
species_151	80S_tRNA_eEF3_GTP_18	
species_152	80S_19	
species_153	80S_aa-tRNA_eEF1A_GTP_19	
species_154	80S_aa-tRNA_19	
species_155	80S_aa-tRNA_eEF2_GTP_19	
species_156	80S_tRNA_19	
species_157	80S_tRNA_eEF3_GTP_19	
species_65	80S_aa-tRNA_eEF2_GTP_4	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_72	80S_tRNA_5	
species_73	80S_tRNA_eEF3_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	

Id	Name	SBO
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	

Id	Name	SBO
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	
species_148	80S_aa-tRNA_18	
species_149	80S_aa-tRNA_eEF2_GTP_18	
species_150	80S_tRNA_18	
species_151	80S_tRNA_eEF3_GTP_18	
species_152	80S_19	
species_153	80S_aa-tRNA_eEF1A_GTP_19	
species_154	80S_aa-tRNA_19	
species_155	80S_aa-tRNA_eEF2_GTP_19	
species_156	80S_tRNA_19	
species_157	80S_tRNA_eEF3_GTP_19	

Products

Table 157: Properties of each product.

Id	Name	SBO
species_72	80S_tRNA_5	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{43} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{function\_2}\left(\text{parameter\_7}, [\text{species\_65}], \text{parameter\_1}, [\text{species\_68}],\right.$$
$$[\text{species\_69}], [\text{species\_70}], [\text{species\_71}], [\text{species\_72}], [\text{species\_73}], [\text{species\_74}],$$
$$[\text{species\_75}], [\text{species\_76}], [\text{species\_77}], [\text{species\_78}], [\text{species\_79}], [\text{species\_80}],$$
$$[\text{species\_81}], [\text{species\_82}], [\text{species\_83}], [\text{species\_84}], [\text{species\_85}], [\text{species\_86}],$$
$$[\text{species\_87}], [\text{species\_88}], [\text{species\_89}], [\text{species\_90}], [\text{species\_91}], [\text{species\_92}],$$
$$[\text{species\_93}], [\text{species\_94}], [\text{species\_95}], [\text{species\_96}], [\text{species\_97}], [\text{species\_98}],$$
$$[\text{species\_99}], [\text{species\_100}], [\text{species\_101}], [\text{species\_102}], [\text{species\_103}], [\text{species\_104}],$$
$$[\text{species\_105}], [\text{species\_106}], [\text{species\_107}], [\text{species\_108}], [\text{species\_109}], [\text{species\_110}],$$
$$[\text{species\_111}], [\text{species\_112}], [\text{species\_113}], [\text{species\_114}], [\text{species\_115}], [\text{species\_116}],$$
$$[\text{species\_117}], [\text{species\_118}], [\text{species\_119}], [\text{species\_120}], [\text{species\_121}], [\text{species\_122}],$$
$$[\text{species\_123}], [\text{species\_124}], [\text{species\_125}], [\text{species\_126}], [\text{species\_127}], [\text{species\_128}],$$
$$[\text{species\_129}], [\text{species\_130}], [\text{species\_131}], [\text{species\_132}], [\text{species\_133}], [\text{species\_134}],$$
$$[\text{species\_135}], [\text{species\_136}], [\text{species\_137}], [\text{species\_138}], [\text{species\_139}], [\text{species\_140}],$$
$$[\text{species\_141}], [\text{species\_142}], [\text{species\_143}], [\text{species\_144}], [\text{species\_145}], [\text{species\_146}],$$
$$[\text{species\_147}], [\text{species\_148}], [\text{species\_149}], [\text{species\_150}], [\text{species\_151}], [\text{species\_152}],$$
$$[\text{species\_153}], [\text{species\_154}], [\text{species\_155}], [\text{species\_156}], [\text{species\_157}])$$

(99)

$\text{function\_2}\left(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3,\right.$ (100)
$B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,$
$F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,$
$C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,$
$B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)$
$$= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + }$$

$\text{function\_2}\left(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2, A3,\right.$ (101)
$B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6, E6,$
$F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10, B10,$
$C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12, F12, A13,$
$B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, B15, C15, D15, E15, F15)$
$$= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + }$$

9.44 Reaction `reaction_44`

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

Name reaction28_4

Reaction equation

$$\text{species\_66} + \text{species\_44} \xrightarrow{\text{species\_66, species\_44}} \text{species\_67} \qquad (102)$$
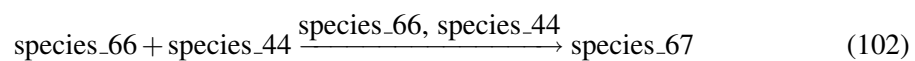
Reactants

Table 158: Properties of each reactant.

Id	Name	SBO
species_66	80S_tRNA_4	
species_44	eEF3_GTP	

Modifiers

Table 159: Properties of each modifier.

Id	Name	SBO
species_66	80S_tRNA_4	
species_44	eEF3_GTP	

Product

Table 160: Properties of each product.

Id	Name	SBO
species_67	80S_tRNA_eEF3_GTP_4	

Kinetic Law

Derived unit contains undeclared units

$$v_{44} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_66}] \cdot [\text{species\_44}] \tag{103}$$

9.45 Reaction `reaction_45`

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

Name reaction29_4

Reaction equation

$$\text{species\_67} \xrightarrow{\text{species\_67}} \text{species\_62} + \text{species\_43} + \text{species\_45} \tag{104}$$

Reactant

Table 161: Properties of each reactant.

Id	Name	SBO
species_67	80S_tRNA_eEF3_GTP_4	

Modifier

Table 162: Properties of each modifier.

Id	Name	SBO
species_67	80S_tRNA_eEF3_GTP_4	

Products

Table 163: Properties of each product.

Id	Name	SBO
species_62	80S_4	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{45} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_67}] \tag{105}$$

9.46 Reaction reaction_46

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_5

Reaction equation

$$\text{species\_40} + \text{species\_68} \xrightleftharpoons{\text{species\_40, species\_68, species\_69}} \text{species\_69} \tag{106}$$
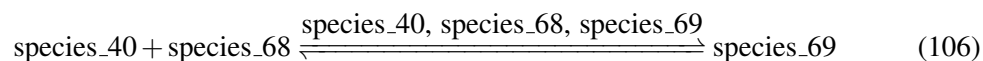
Reactants

Table 164: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_68	80S_5	

Modifiers

Table 165: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_68	80S_5	
species_69	80S_aa-tRNA_eEF1A_GTP_5	

Product

Table 166: Properties of each product.

Id	Name	SBO
species_69	80S_aa-tRNA_eEF1A_GTP_5	

Kinetic Law

Derived unit contains undeclared units

$$v_{46} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_68}] - \text{parameter\_3} \cdot [\text{species\_69}]) \tag{107}$$

9.47 Reaction `reaction_47`

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

Name reaction23_5

Reaction equation

$$\text{species\_69} \xrightarrow{\text{species\_69}} \text{species\_70} + \text{species\_35} \tag{108}$$
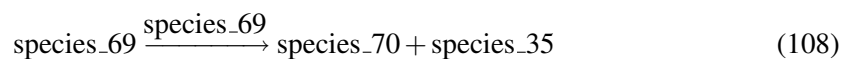
Reactant

Table 167: Properties of each reactant.

Id	Name	SBO
species_69	80S_aa-tRNA_eEF1A_GTP_5	

Modifier

Table 168: Properties of each modifier.

Id	Name	SBO
species_69	80S_aa-tRNA_eEF1A_GTP_5	

Products

Table 169: Properties of each product.

Id	Name	SBO
species_70	80S_aa-tRNA_5	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{47} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_69}] \tag{109}$$

9.48 Reaction reaction_48

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_5

Reaction equation

$$\text{species\_42} + \text{species\_70} \xrightleftharpoons{\text{species\_42, species\_70, species\_71}} \text{species\_71} \tag{110}$$

Reactants

Table 170: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_70	80S_aa-tRNA_5	

Modifiers

Table 171: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_70	80S_aa-tRNA_5	
species_71	80S_aa-tRNA_eEF2_GTP_5	

Product

Table 172: Properties of each product.

Id	Name	SBO
species_71	80S_aa-tRNA_eEF2_GTP_5	

Kinetic Law

Derived unit contains undeclared units

$$v_{48} = \text{vol}\left(\text{compartment\_1}\right) \cdot \left(\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_70}] - \text{parameter\_6} \cdot [\text{species\_71}]\right) \tag{111}$$

9.49 Reaction `reaction_49`

This is an irreversible reaction of one reactant forming two products influenced by 175 modifiers.

Name reaction26_5

Reaction equation

$$\text{species\_71} \xrightarrow{\text{species\_74, species\_75, species\_76, species\_77, species\_78, species\_79, species\_80, species\_81, species\_8}} \tag{112}$$

Reactant

Table 173: Properties of each reactant.

Id	Name	SBO
species_71	80S_aa-tRNA_eEF2_GTP_5	

Modifiers

Table 174: Properties of each modifier.

Id	Name	SBO
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	

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Id	Name	SBO
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	
species_145	80S_tRNA_eEF3_GTP_17	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	
species_148	80S_aa-tRNA_18	

Id	Name	SBO
species_149	80S_aa-tRNA_eEF2_GTP_18	
species_150	80S_tRNA_18	
species_151	80S_tRNA_eEF3_GTP_18	
species_152	80S_19	
species_153	80S_aa-tRNA_eEF1A_GTP_19	
species_154	80S_aa-tRNA_19	
species_155	80S_aa-tRNA_eEF2_GTP_19	
species_156	80S_tRNA_19	
species_157	80S_tRNA_eEF3_GTP_19	
species_158	80S_20	
species_159	80S_tRNA_20	
species_160	80S_tRNA_eEF3_GTP_20	
species_71	80S_aa-tRNA_eEF2_GTP_5	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	
species_78	80S_tRNA_6	
species_79	80S_tRNA_eEF3_GTP_6	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	
species_84	80S_tRNA_7	
species_85	80S_tRNA_eEF3_GTP_7	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	
species_90	80S_tRNA_8	
species_91	80S_tRNA_eEF3_GTP_8	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	
species_96	80S_tRNA_9	
species_97	80S_tRNA_eEF3_GTP_9	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	
species_102	80S_tRNA_10	

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Id	Name	SBO
species_103	80S_tRNA_eEF3_GTP_10	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	
species_108	80S_tRNA_11	
species_109	80S_tRNA_eEF3_GTP_11	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	
species_114	80S_tRNA_12	
species_115	80S_tRNA_eEF3_GTP_12	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	
species_120	80S_tRNA_13	
species_121	80S_tRNA_eEF3_GTP_13	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	
species_126	80S_tRNA_14	
species_127	80S_tRNA_eEF3_GTP_14	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	
species_132	80S_tRNA_15	
species_133	80S_tRNA_eEF3_GTP_15	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	
species_138	80S_tRNA_16	
species_139	80S_tRNA_eEF3_GTP_16	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	
species_144	80S_tRNA_17	

Id	Name	SBO
species_145	80S_tRNA_eEF3_GTP_17	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	
species_148	80S_aa-tRNA_18	
species_149	80S_aa-tRNA_eEF2_GTP_18	
species_150	80S_tRNA_18	
species_151	80S_tRNA_eEF3_GTP_18	
species_152	80S_19	
species_153	80S_aa-tRNA_eEF1A_GTP_19	
species_154	80S_aa-tRNA_19	
species_155	80S_aa-tRNA_eEF2_GTP_19	
species_156	80S_tRNA_19	
species_157	80S_tRNA_eEF3_GTP_19	
species_158	80S_20	
species_159	80S_tRNA_20	
species_160	80S_tRNA_eEF3_GTP_20	

Products

Table 175: Properties of each product.

Id	Name	SBO
species_78	80S_tRNA_6	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

Produced by SBML2LATEX

$$v_{49} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{function\_3}\left(\text{parameter\_7}, [\text{species\_71}], \text{parameter\_1}, [\text{species\_74}],\right.$$
$$[\text{species\_75}], [\text{species\_76}], [\text{species\_77}], [\text{species\_78}], [\text{species\_79}], [\text{species\_80}],$$
$$[\text{species\_81}], [\text{species\_82}], [\text{species\_83}], [\text{species\_84}], [\text{species\_85}], [\text{species\_86}],$$
$$[\text{species\_87}], [\text{species\_88}], [\text{species\_89}], [\text{species\_90}], [\text{species\_91}], [\text{species\_92}],$$
$$[\text{species\_93}], [\text{species\_94}], [\text{species\_95}], [\text{species\_96}], [\text{species\_97}], [\text{species\_98}],$$
$$[\text{species\_99}], [\text{species\_100}], [\text{species\_101}], [\text{species\_102}], [\text{species\_103}], [\text{species\_104}],$$
$$[\text{species\_105}], [\text{species\_106}], [\text{species\_107}], [\text{species\_108}], [\text{species\_109}], [\text{species\_110}],$$
$$[\text{species\_111}], [\text{species\_112}], [\text{species\_113}], [\text{species\_114}], [\text{species\_115}], [\text{species\_116}],$$
$$[\text{species\_117}], [\text{species\_118}], [\text{species\_119}], [\text{species\_120}], [\text{species\_121}], [\text{species\_122}],$$
$$[\text{species\_123}], [\text{species\_124}], [\text{species\_125}], [\text{species\_126}], [\text{species\_127}], [\text{species\_128}],$$
$$[\text{species\_129}], [\text{species\_130}], [\text{species\_131}], [\text{species\_132}], [\text{species\_133}], [\text{species\_134}],$$
$$[\text{species\_135}], [\text{species\_136}], [\text{species\_137}], [\text{species\_138}], [\text{species\_139}], [\text{species\_140}],$$
$$[\text{species\_141}], [\text{species\_142}], [\text{species\_143}], [\text{species\_144}], [\text{species\_145}], [\text{species\_146}],$$
$$[\text{species\_147}], [\text{species\_148}], [\text{species\_149}], [\text{species\_150}], [\text{species\_151}], [\text{species\_152}],$$
$$[\text{species\_153}], [\text{species\_154}], [\text{species\_155}], [\text{species\_156}], [\text{species\_157}], [\text{species\_158}],$$
$$[\text{species\_159}], [\text{species\_160}])$$
$$(113)$$

$\text{function\_3}\left(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2,\right.$ \hfill (114)
$A3, B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6,$
$E6, F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10,$
$B10, C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12,$
$F12, A13, B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, E15, F15)$
$$= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3}$$

$\text{function\_3}\left(\text{k}, \text{substrate}, \text{mRNA\_tot}, A1, B1, C1, D1, E1, F1, A2, B2, C2, D2, E2, F2,\right.$ \hfill (115)
$A3, B3, C3, D3, E3, F3, A4, B4, C4, D4, E4, F4, A5, B5, C5, D5, E5, F5, A6, B6, C6, D6,$
$E6, F6, A7, B7, C7, D7, E7, F7, A8, B8, C8, D8, E8, F8, A9, B9, C9, D9, E9, F9, A10,$
$B10, C10, D10, E10, F10, A11, B11, C11, D11, E11, F11, A12, B12, C12, D12, E12,$
$F12, A13, B13, C13, D13, E13, F13, A14, B14, C14, D14, E14, F14, A15, E15, F15)$
$$= \frac{\text{k} \cdot \text{substrate} \cdot (\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3 + C}{\text{mRNA\_tot} - (A1 + B1 + C1 + D1 + E1 + F1 + A2 + B2 + C2 + D2 + E2 + F2 + A3 + B3}$$

9.50 Reaction `reaction_50`

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

Name reaction28_5

Reaction equation

$$\text{species\_72} + \text{species\_44} \xrightarrow{\text{species\_72, species\_44}} \text{species\_73} \qquad (116)$$
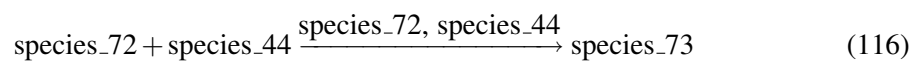
Reactants

Table 176: Properties of each reactant.

Id	Name	SBO
species_72	80S_tRNA_5	
species_44	eEF3_GTP	

Modifiers

Table 177: Properties of each modifier.

Id	Name	SBO
species_72	80S_tRNA_5	
species_44	eEF3_GTP	

Product

Table 178: Properties of each product.

Id	Name	SBO
species_73	80S_tRNA_eEF3_GTP_5	

Kinetic Law

Derived unit contains undeclared units

$$v_{50} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_72}] \cdot [\text{species\_44}] \quad (117)$$

9.51 Reaction `reaction_51`

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

Name reaction29_5

Reaction equation

$$\text{species\_73} \xrightarrow{\text{species\_73}} \text{species\_68} + \text{species\_43} + \text{species\_45} \quad (118)$$

Reactant

Table 179: Properties of each reactant.

Id	Name	SBO
species_73	80S_tRNA_eEF3_GTP_5	

Modifier

Table 180: Properties of each modifier.

Id	Name	SBO
species_73	80S_tRNA_eEF3_GTP_5	

Products

Table 181: Properties of each product.

Id	Name	SBO
species_68	80S_5	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{51} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_73}] \tag{119}$$

9.52 Reaction reaction_52

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_6

Reaction equation

$$\text{species\_40} + \text{species\_74} \xrightleftharpoons{\text{species\_40, species\_74, species\_75}} \text{species\_75} \tag{120}$$
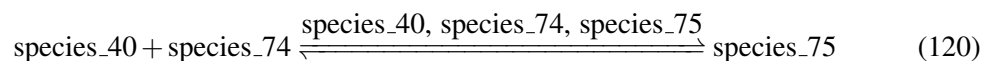
Reactants

Table 182: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_74	80S_6	

Modifiers

Table 183: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_74	80S_6	
species_75	80S_aa-tRNA_eEF1A_GTP_6	

Product

Table 184: Properties of each product.

Id	Name	SBO
species_75	80S_aa-tRNA_eEF1A_GTP_6	

Kinetic Law

Derived unit contains undeclared units

$$v_{52} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot (\mathrm{parameter\_2} \cdot [\mathrm{species\_40}] \cdot [\mathrm{species\_74}] - \mathrm{parameter\_3} \cdot [\mathrm{species\_75}]) \tag{121}$$

9.53 Reaction reaction_53

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

Name reaction23_6

Reaction equation

$$\mathrm{species\_75} \xrightarrow{\mathrm{species\_75}} \mathrm{species\_76} + \mathrm{species\_35} \tag{122}$$
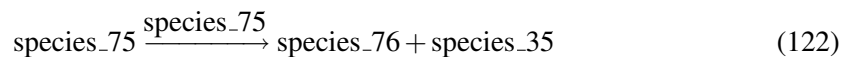
Reactant

Table 185: Properties of each reactant.

Id	Name	SBO
species_75	80S_aa-tRNA_eEF1A_GTP_6	

Modifier

Table 186: Properties of each modifier.

Id	Name	SBO
species_75	80S_aa-tRNA_eEF1A_GTP_6	

Products

Table 187: Properties of each product.

Id	Name	SBO
species_76	80S_aa-tRNA_6	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{53} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_75}] \tag{123}$$

9.54 Reaction `reaction_54`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_6

Reaction equation

$$\text{species\_42} + \text{species\_76} \xrightleftharpoons{\text{species\_42, species\_76, species\_77}} \text{species\_77} \tag{124}$$
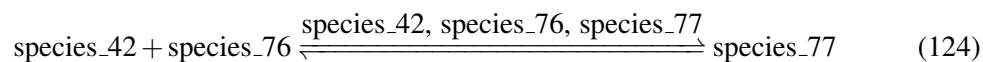
Reactants

Table 188: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_76	80S_aa-tRNA_6	

Modifiers

Table 189: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_76	80S_aa-tRNA_6	
species_77	80S_aa-tRNA_eEF2_GTP_6	

Product

Table 190: Properties of each product.

Id	Name	SBO
species_77	80S_aa-tRNA_eEF2_GTP_6	

Kinetic Law

Derived unit contains undeclared units

$$v_{54} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_76}] - \text{parameter\_6} \cdot [\text{species\_77}]) \tag{125}$$

9.55 Reaction `reaction_55`

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

Name reaction26_6

Reaction equation

$$\text{species\_77} \xrightarrow{\text{species\_77}} \text{species\_84} + \text{species\_41} \tag{126}$$
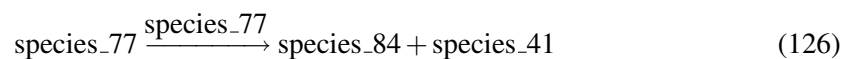
Reactant

Table 191: Properties of each reactant.

Id	Name	SBO
species_77	80S_aa-tRNA_eEF2_GTP_6	

Modifier

Table 192: Properties of each modifier.

Id	Name	SBO
species_77	80S_aa-tRNA_eEF2_GTP_6	

Products

Table 193: Properties of each product.

Id	Name	SBO
species_84	80S_tRNA_7	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{55} = \text{vol}\left(\text{compartment}\_1\right) \cdot \text{parameter}\_7 \cdot [\text{species}\_77] \tag{127}$$

9.56 Reaction reaction_56

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

Name reaction28_6

Reaction equation

$$\text{species}\_78 + \text{species}\_44 \xrightarrow{\text{species}\_78, \text{ species}\_44} \text{species}\_79 \tag{128}$$
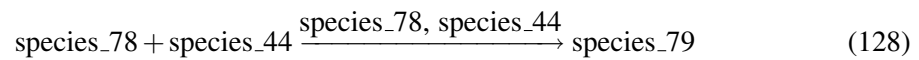
Reactants

Table 194: Properties of each reactant.

Id	Name	SBO
species_78	80S_tRNA_6	
species_44	eEF3_GTP	

Modifiers

Table 195: Properties of each modifier.

Id	Name	SBO
species_78	80S_tRNA_6	
species_44	eEF3_GTP	

Product

Table 196: Properties of each product.

Id	Name	SBO
species_79	80S_tRNA_eEF3_GTP_6	

Kinetic Law

Derived unit contains undeclared units

$$v_{56} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_78}] \cdot [\text{species\_44}] \tag{129}$$

9.57 Reaction reaction_57

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

Name reaction29_6

Reaction equation

$$\text{species\_79} \xrightarrow{\text{species\_79}} \text{species\_74} + \text{species\_43} + \text{species\_45} \tag{130}$$

Reactant

Produced by SBML2LATEX
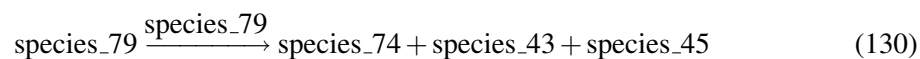
Table 197: Properties of each reactant.

Id	Name	SBO
species_79	80S_tRNA_eEF3_GTP_6	

Modifier

Table 198: Properties of each modifier.

Id	Name	SBO
species_79	80S_tRNA_eEF3_GTP_6	

Products

Table 199: Properties of each product.

Id	Name	SBO
species_74	80S_6	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{57} = \mathrm{vol}\left(\mathrm{compartment\_1}\right) \cdot \mathrm{parameter\_9} \cdot [\mathrm{species\_79}] \qquad (131)$$

9.58 Reaction reaction_58

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_7

Reaction equation

$$\mathrm{species\_40} + \mathrm{species\_80} \xrightleftharpoons{\mathrm{species\_40,\ species\_80,\ species\_81}} \mathrm{species\_81} \qquad (132)$$
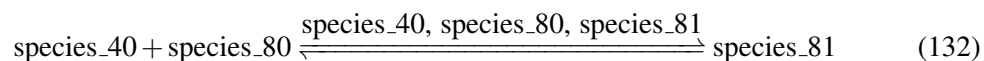
Reactants

Table 200: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_80	80S_7	

Modifiers

Table 201: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_80	80S_7	
species_81	80S_aa-tRNA_eEF1A_GTP_7	

Product

Table 202: Properties of each product.

Id	Name	SBO
species_81	80S_aa-tRNA_eEF1A_GTP_7	

Kinetic Law

Derived unit contains undeclared units

$$v_{58} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_80}] - \text{parameter\_3} \cdot [\text{species\_81}]) \tag{133}$$

9.59 Reaction `reaction_59`

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

Name reaction23_7

Reaction equation

$$\text{species\_81} \xrightarrow{\text{species\_81}} \text{species\_82} + \text{species\_35} \tag{134}$$
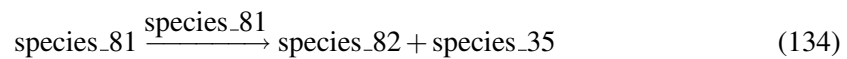
Reactant

Table 203: Properties of each reactant.

Id	Name	SBO
species_81	80S_aa-tRNA_eEF1A_GTP_7	

Modifier

Table 204: Properties of each modifier.

Id	Name	SBO
species_81	80S_aa-tRNA_eEF1A_GTP_7	

Products

Table 205: Properties of each product.

Id	Name	SBO
species_82	80S_aa-tRNA_7	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{59} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_81}] \tag{135}$$

9.60 Reaction reaction_60

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_7

Reaction equation

$$\text{species\_42} + \text{species\_82} \xrightleftharpoons{\text{species\_42, species\_82, species\_83}} \text{species\_83} \tag{136}$$

Reactants

Table 206: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_82	80S_aa-tRNA_7	

Modifiers

Table 207: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_82	80S_aa-tRNA_7	
species_83	80S_aa-tRNA_eEF2_GTP_7	

Product

Table 208: Properties of each product.

Id	Name	SBO
species_83	80S_aa-tRNA_eEF2_GTP_7	

Kinetic Law

Derived unit contains undeclared units

$$v_{60} = \text{vol}\left(\text{compartment\_1}\right) \cdot \left(\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_82}] - \text{parameter\_6} \cdot [\text{species\_83}]\right) \tag{137}$$

9.61 Reaction reaction_61

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

Name reaction26_7

Reaction equation

$$\text{species\_83} \xrightarrow{\text{species\_83}} \text{species\_90} + \text{species\_41} \tag{138}$$
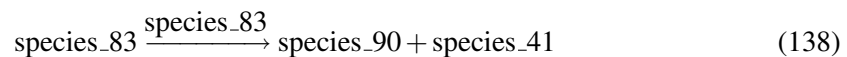
Reactant

Table 209: Properties of each reactant.

Id	Name	SBO
species_83	80S_aa-tRNA_eEF2_GTP_7	

Modifier

Table 210: Properties of each modifier.

Id	Name	SBO
species_83	80S_aa-tRNA_eEF2_GTP_7	

Products

Table 211: Properties of each product.

Id	Name	SBO
species_90	80S_tRNA_8	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{61} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_7} \cdot [\mathrm{species\_83}] \tag{139}$$

9.62 Reaction reaction_62

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

Name reaction28_7

Reaction equation

$$\mathrm{species\_84} + \mathrm{species\_44} \xrightarrow{\mathrm{species\_84,\ species\_44}} \mathrm{species\_85} \tag{140}$$

Reactants

Table 212: Properties of each reactant.

Id	Name	SBO
species_84	80S_tRNA_7	
species_44	eEF3_GTP	

Modifiers

Table 213: Properties of each modifier.

Id	Name	SBO
species_84	80S_tRNA_7	
species_44	eEF3_GTP	

Product

Table 214: Properties of each product.

Id	Name	SBO
species_85	80S_tRNA_eEF3_GTP_7	

Kinetic Law

Derived unit contains undeclared units

$$v_{62} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_84}] \cdot [\text{species\_44}] \tag{141}$$

9.63 Reaction `reaction_63`

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

Name reaction29_7

Reaction equation

$$\text{species\_85} \xrightarrow{\text{species\_85}} \text{species\_80} + \text{species\_43} + \text{species\_45} \tag{142}$$

Reactant

Produced by SBML2LATEX

Table 215: Properties of each reactant.

Id	Name	SBO
species_85	80S_tRNA_eEF3_GTP_7	

Modifier

Table 216: Properties of each modifier.

Id	Name	SBO
species_85	80S_tRNA_eEF3_GTP_7	

Products

Table 217: Properties of each product.

Id	Name	SBO
species_80	80S_7	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{63} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_85}] \tag{143}$$

9.64 Reaction `reaction_64`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_8

Reaction equation

$$\text{species\_40} + \text{species\_86} \xrightleftharpoons{\text{species\_40, species\_86, species\_87}} \text{species\_87} \tag{144}$$
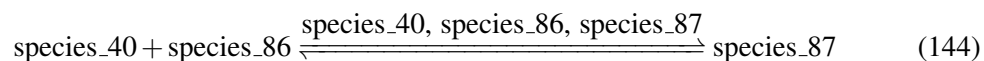
Reactants

Table 218: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_86	80S_8	

Modifiers

Table 219: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_86	80S_8	
species_87	80S_aa-tRNA_eEF1A_GTP_8	

Product

Table 220: Properties of each product.

Id	Name	SBO
species_87	80S_aa-tRNA_eEF1A_GTP_8	

Kinetic Law

Derived unit contains undeclared units

$$v_{64} = \text{vol}(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_86}] - \text{parameter\_3} \cdot [\text{species\_87}])$$
(145)

9.65 Reaction reaction_65

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

Name reaction23_8

Reaction equation

$$\text{species\_87} \xrightarrow{\text{species\_87}} \text{species\_88} + \text{species\_35}$$
(146)
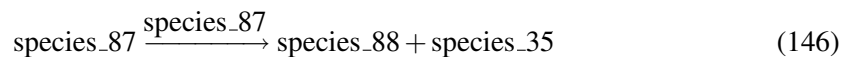
Reactant

Table 221: Properties of each reactant.

Id	Name	SBO
species_87	80S_aa-tRNA_eEF1A_GTP_8	

Modifier

Table 222: Properties of each modifier.

Id	Name	SBO
species_87	80S_aa-tRNA_eEF1A_GTP_8	

Products

Table 223: Properties of each product.

Id	Name	SBO
species_88	80S_aa-tRNA_8	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{65} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_87}] \tag{147}$$

9.66 Reaction reaction_66

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_8

Reaction equation

$$\text{species\_42} + \text{species\_88} \xrightleftharpoons[\hspace{4cm}]{\text{species\_42, species\_88, species\_89}} \text{species\_89} \tag{148}$$
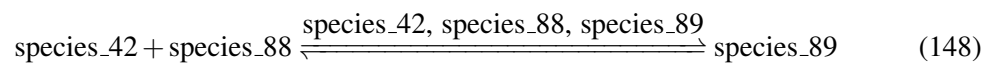
Reactants

Table 224: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_88	80S_aa-tRNA_8	

Modifiers

Table 225: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_88	80S_aa-tRNA_8	
species_89	80S_aa-tRNA_eEF2_GTP_8	

Product

Table 226: Properties of each product.

Id	Name	SBO
species_89	80S_aa-tRNA_eEF2_GTP_8	

Kinetic Law

Derived unit contains undeclared units

$$v_{66} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot (\mathrm{parameter\_5} \cdot [\mathrm{species\_42}] \cdot [\mathrm{species\_88}] - \mathrm{parameter\_6} \cdot [\mathrm{species\_89}]) \tag{149}$$

9.67 Reaction `reaction_67`

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

Name reaction26_8

Reaction equation

$$\mathrm{species\_89} \xrightarrow{\mathrm{species\_89}} \mathrm{species\_96} + \mathrm{species\_41} \tag{150}$$

Reactant

Table 227: Properties of each reactant.

Id	Name	SBO
species_89	80S_aa-tRNA_eEF2_GTP_8	

Modifier

Table 228: Properties of each modifier.

Id	Name	SBO
species_89	80S_aa-tRNA_eEF2_GTP_8	

Products

Table 229: Properties of each product.

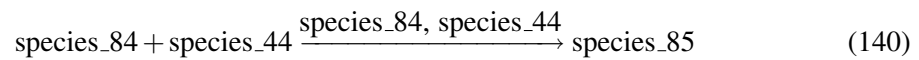| Id	Name	SBO
species_96	80S_tRNA_9	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{67} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_7} \cdot [\text{species\_89}] \tag{151}$$

9.68 Reaction `reaction_68`

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

Name reaction28_8

Reaction equation

$$\text{species\_90} + \text{species\_44} \xrightarrow{\text{species\_90, species\_44}} \text{species\_91} \tag{152}$$
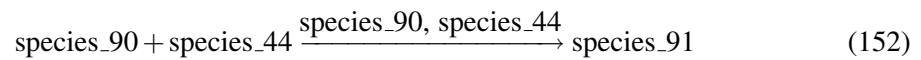
Reactants

Table 230: Properties of each reactant.

Id	Name	SBO
species_90	80S_tRNA_8	
species_44	eEF3_GTP	

Modifiers

Table 231: Properties of each modifier.

Id	Name	SBO
species_90	80S_tRNA_8	
species_44	eEF3_GTP	

Product

Table 232: Properties of each product.

Id	Name	SBO
species_91	80S_tRNA_eEF3_GTP_8	

Kinetic Law

Derived unit contains undeclared units

$$v_{68} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_90}] \cdot [\text{species\_44}] \qquad (153)$$

9.69 Reaction reaction_69

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

Name reaction29_8

Reaction equation

$$\text{species\_91} \xrightarrow{\text{species\_91}} \text{species\_86} + \text{species\_43} + \text{species\_45} \qquad (154)$$

Reactant

Produced by SBML2LATEX
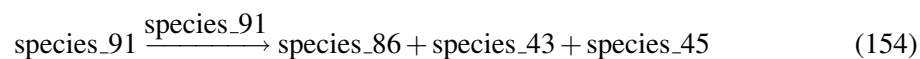
Table 233: Properties of each reactant.

Id	Name	SBO
species_91	80S_tRNA_eEF3_GTP_8	

Modifier

Table 234: Properties of each modifier.

Id	Name	SBO
species_91	80S_tRNA_eEF3_GTP_8	

Products

Table 235: Properties of each product.

Id	Name	SBO
species_86	80S_8	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{69} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_91}] \tag{155}$$

9.70 Reaction reaction_70

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_9

Reaction equation

$$\text{species\_40} + \text{species\_92} \xrightleftharpoons{\text{species\_40, species\_92, species\_93}} \text{species\_93} \tag{156}$$
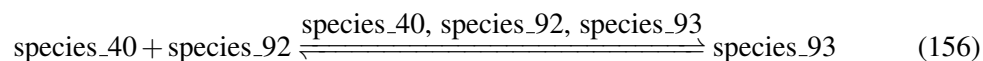
Reactants

Table 236: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_92	80S_9	

Modifiers

Table 237: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_92	80S_9	
species_93	80S_aa-tRNA_eEF1A_GTP_9	

Product

Table 238: Properties of each product.

Id	Name	SBO
species_93	80S_aa-tRNA_eEF1A_GTP_9	

Kinetic Law

Derived unit contains undeclared units

$$v_{70} = \text{vol}(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_92}] - \text{parameter\_3} \cdot [\text{species\_93}]) \tag{157}$$

9.71 Reaction `reaction_71`

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

Name reaction23_9

Reaction equation

$$\text{species\_93} \xrightarrow{\text{species\_93}} \text{species\_94} + \text{species\_35} \tag{158}$$
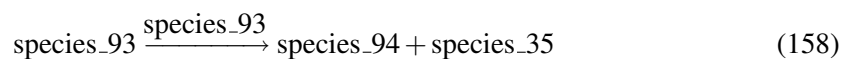
Reactant

Table 239: Properties of each reactant.

Id	Name	SBO
species_93	80S_aa-tRNA_eEF1A_GTP_9	

Modifier

Table 240: Properties of each modifier.

Id	Name	SBO
species_93	80S_aa-tRNA_eEF1A_GTP_9	

Products

Table 241: Properties of each product.

Id	Name	SBO
species_94	80S_aa-tRNA_9	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{71} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_93}] \tag{159}$$

9.72 Reaction reaction_72

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_9

Reaction equation

$$\text{species\_42} + \text{species\_94} \xrightleftharpoons{\text{species\_42, species\_94, species\_95}} \text{species\_95} \tag{160}$$
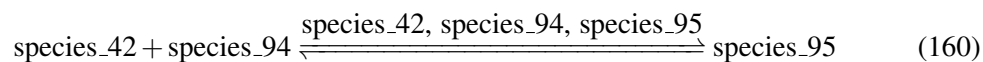
Reactants

Table 242: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_94	80S_aa-tRNA_9	

Modifiers

Table 243: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_94	80S_aa-tRNA_9	
species_95	80S_aa-tRNA_eEF2_GTP_9	

Product

Table 244: Properties of each product.

Id	Name	SBO
species_95	80S_aa-tRNA_eEF2_GTP_9	

Kinetic Law
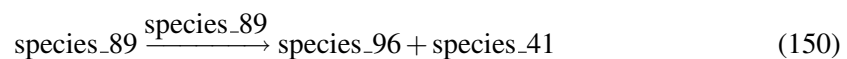
Derived unit contains undeclared units

$$v_{72} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_94}] - \text{parameter\_6} \cdot [\text{species\_95}]) \tag{161}$$

9.73 Reaction `reaction_73`

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

Name reaction26_9

Reaction equation

$$\text{species\_95} \xrightarrow{\text{species\_95}} \text{species\_102} + \text{species\_41} \tag{162}$$
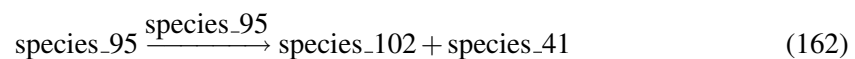
Reactant

Table 245: Properties of each reactant.

Id	Name	SBO
species_95	80S_aa-tRNA_eEF2_GTP_9	

Modifier

Table 246: Properties of each modifier.

Id	Name	SBO
species_95	80S_aa-tRNA_eEF2_GTP_9	

Products

Table 247: Properties of each product.

Id	Name	SBO
species_102	80S_tRNA_10	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{73} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_7} \cdot [\text{species\_95}] \tag{163}$$

9.74 Reaction reaction_74

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

Name reaction28_9

Reaction equation

$$\text{species\_96} + \text{species\_44} \xrightarrow{\text{species\_96, species\_44}} \text{species\_97} \tag{164}$$
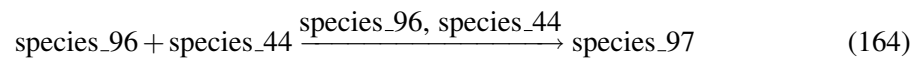
Reactants

Table 248: Properties of each reactant.

Id	Name	SBO
species_96	80S_tRNA_9	
species_44	eEF3_GTP	

Modifiers

Table 249: Properties of each modifier.

Id	Name	SBO
species_96	80S_tRNA_9	
species_44	eEF3_GTP	

Product

Table 250: Properties of each product.

Id	Name	SBO
species_97	80S_tRNA_eEF3_GTP_9	

Kinetic Law

Derived unit contains undeclared units

$$v_{74} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_96}] \cdot [\text{species\_44}] \qquad (165)$$

9.75 Reaction reaction_75

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

Name reaction29_9

Reaction equation

$$\text{species\_97} \xrightarrow{\text{species\_97}} \text{species\_92} + \text{species\_43} + \text{species\_45} \qquad (166)$$
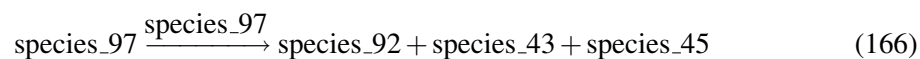
Reactant

Table 251: Properties of each reactant.

Id	Name	SBO
species_97	80S_tRNA_eEF3_GTP_9	

Modifier

Table 252: Properties of each modifier.

Id	Name	SBO
species_97	80S_tRNA_eEF3_GTP_9	

Products

Table 253: Properties of each product.

Id	Name	SBO
species_92	80S_9	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{75} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_97}] \tag{167}$$

9.76 Reaction reaction_76

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_10

Reaction equation

$$\text{species\_40} + \text{species\_98} \xrightleftharpoons{\text{species\_40, species\_98, species\_99}} \text{species\_99} \tag{168}$$
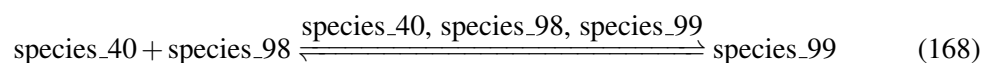
Reactants

Table 254: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_98	80S_10	

Modifiers

Table 255: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_98	80S_10	
species_99	80S_aa-tRNA_eEF1A_GTP_10	

Product

Table 256: Properties of each product.

Id	Name	SBO
species_99	80S_aa-tRNA_eEF1A_GTP_10	

Kinetic Law

Derived unit contains undeclared units

$$v_{76} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_98}] - \text{parameter\_3} \cdot [\text{species\_99}])$$
$$(169)$$

9.77 Reaction `reaction_77`

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

Name reaction23_10

Reaction equation

$$\text{species\_99} \xrightarrow{\text{species\_99}} \text{species\_100} + \text{species\_35} \tag{170}$$
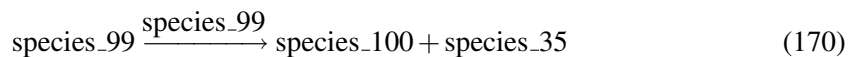
Reactant

Table 257: Properties of each reactant.

Id	Name	SBO
species_99	80S_aa-tRNA_eEF1A_GTP_10	

Modifier

Table 258: Properties of each modifier.

Id	Name	SBO
species_99	80S_aa-tRNA_eEF1A_GTP_10	

Products

Table 259: Properties of each product.

Id	Name	SBO
species_100	80S_aa-tRNA_10	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{77} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_99}] \tag{171}$$

9.78 Reaction `reaction_78`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_10

Reaction equation

$$\text{species\_42} + \text{species\_100} \xrightleftharpoons{\text{species\_42, species\_100, species\_101}} \text{species\_101} \tag{172}$$
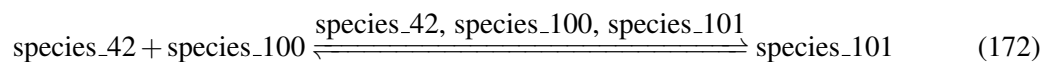
Reactants

Table 260: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_100	80S_aa-tRNA_10	

Modifiers

Table 261: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_100	80S_aa-tRNA_10	
species_101	80S_aa-tRNA_eEF2_GTP_10	

Product

Table 262: Properties of each product.

Id	Name	SBO
species_101	80S_aa-tRNA_eEF2_GTP_10	

Kinetic Law

Derived unit contains undeclared units

$$v_{78} = \text{vol}\,(\text{compartment\_1}) \\ \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_100}] - \text{parameter\_6} \cdot [\text{species\_101}]) \tag{173}$$

9.79 Reaction reaction_79

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

Name reaction26_10

Reaction equation

$$\text{species\_101} \xrightarrow{\text{species\_101}} \text{species\_108} + \text{species\_41} \tag{174}$$
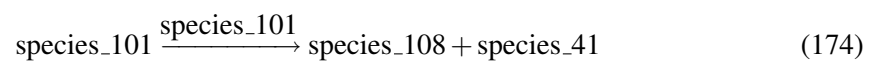
Reactant

Table 263: Properties of each reactant.

Id	Name	SBO
species_101	80S_aa-tRNA_eEF2_GTP_10	

Modifier

Table 264: Properties of each modifier.

Id	Name	SBO
species_101	80S_aa-tRNA_eEF2_GTP_10	

Products

Table 265: Properties of each product.

Id	Name	SBO
species_108	80S_tRNA_11	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{79} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_7} \cdot [\mathrm{species\_101}] \tag{175}$$

9.80 Reaction `reaction_80`

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

Name reaction28_10

Reaction equation

$$\mathrm{species\_102} + \mathrm{species\_44} \xrightarrow{\mathrm{species\_102,\ species\_44}} \mathrm{species\_103} \tag{176}$$
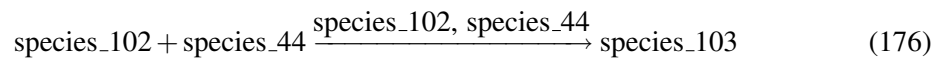
Reactants

Table 266: Properties of each reactant.

Id	Name	SBO
species_102	80S_tRNA_10	
species_44	eEF3_GTP	

Modifiers

Table 267: Properties of each modifier.

Id	Name	SBO
species_102	80S_tRNA_10	
species_44	eEF3_GTP	

Product

Table 268: Properties of each product.

Id	Name	SBO
species_103	80S_tRNA_eEF3_GTP_10	

Kinetic Law

Derived unit contains undeclared units

$$v_{80} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_8} \cdot [\mathrm{species\_102}] \cdot [\mathrm{species\_44}] \qquad (177)$$

9.81 Reaction reaction_81

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

Name reaction29_10

Reaction equation

$$\mathrm{species\_103} \xrightarrow{\mathrm{species\_103}} \mathrm{species\_98} + \mathrm{species\_43} + \mathrm{species\_45} \qquad (178)$$
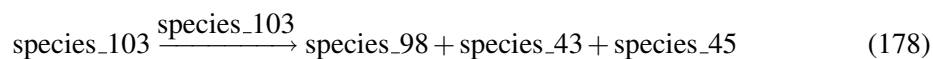
Reactant

Table 269: Properties of each reactant.

Id	Name	SBO
species_103	80S_tRNA_eEF3_GTP_10	

Modifier

Table 270: Properties of each modifier.

Id	Name	SBO
species_103	80S_tRNA_eEF3_GTP_10	

Products

Table 271: Properties of each product.

Id	Name	SBO
species_98	80S_10	
species_43	eEF3_GDP	
species_45	tRNA	

### Kinetic Law

Derived unit contains undeclared units

$$v_{81} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_103}] \tag{179}$$

9.82 Reaction `reaction_82`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_11

Reaction equation

$$\text{species\_40} + \text{species\_104} \xrightleftharpoons{\text{species\_40, species\_104, species\_105}} \text{species\_105} \tag{180}$$
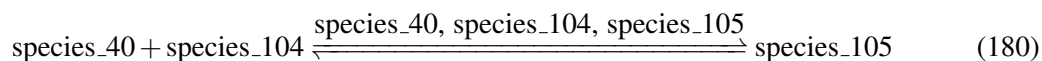
Reactants

Table 272: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_104	80S_11	

Modifiers

Table 273: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_104	80S_11	
species_105	80S_aa-tRNA_eEF1A_GTP_11	

Product

Table 274: Properties of each product.

Id	Name	SBO
species_105	80S_aa-tRNA_eEF1A_GTP_11	

Kinetic Law

Derived unit contains undeclared units

$$v_{82} = \text{vol}\,(\text{compartment\_1}) \\ \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_104}] - \text{parameter\_3} \cdot [\text{species\_105}]) \tag{181}$$

9.83 Reaction `reaction_83`

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

Name reaction23_11

Reaction equation

$$\text{species\_105} \xrightarrow{\text{species\_105}} \text{species\_106} + \text{species\_35} \tag{182}$$
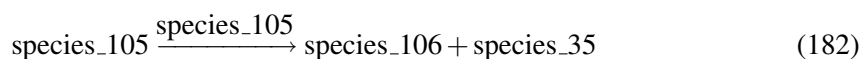
Reactant

Table 275: Properties of each reactant.

Id	Name	SBO
species_105	80S_aa-tRNA_eEF1A_GTP_11	

Modifier

Table 276: Properties of each modifier.

Id	Name	SBO
species_105	80S_aa-tRNA_eEF1A_GTP_11	

Products

Table 277: Properties of each product.

Id	Name	SBO
species_106	80S_aa-tRNA_11	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{83} = \mathrm{vol}\left(\mathrm{compartment\_1}\right) \cdot \mathrm{parameter\_4} \cdot [\mathrm{species\_105}] \tag{183}$$

9.84 Reaction `reaction_84`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_11

Reaction equation

$$\mathrm{species\_42} + \mathrm{species\_106} \xrightleftharpoons{\mathrm{species\_42,\ species\_106,\ species\_107}} \mathrm{species\_107} \tag{184}$$

Reactants

Table 278: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_106	80S_aa-tRNA_11	

Modifiers

Table 279: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_106	80S_aa-tRNA_11	
species_107	80S_aa-tRNA_eEF2_GTP_11	

Product

Table 280: Properties of each product.

Id	Name	SBO
species_107	80S_aa-tRNA_eEF2_GTP_11	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{84} = {}& \mathrm{vol}\,(\mathrm{compartment\_1}) \\
& \cdot (\mathrm{parameter\_5} \cdot [\mathrm{species\_42}] \cdot [\mathrm{species\_106}] - \mathrm{parameter\_6} \cdot [\mathrm{species\_107}])
\end{aligned}
\tag{185}
$$

9.85 Reaction `reaction_85`

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

Name reaction26_11

Reaction equation

$$
\mathrm{species\_107} \xrightarrow{\mathrm{species\_107}} \mathrm{species\_114} + \mathrm{species\_41}
\tag{186}
$$
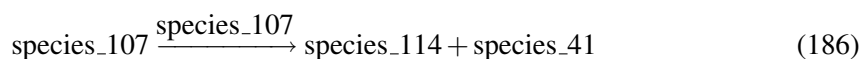
Reactant

Table 281: Properties of each reactant.

Id	Name	SBO
species_107	80S_aa-tRNA_eEF2_GTP_11	

Modifier

Table 282: Properties of each modifier.

Id	Name	SBO
species_107	80S_aa-tRNA_eEF2_GTP_11	

Products

Table 283: Properties of each product.

Id	Name	SBO
species_114	80S_tRNA_12	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{85} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_7} \cdot \left[\text{species\_107}\right] \tag{187}$$

9.86 Reaction `reaction_86`

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

Name reaction28_11

Reaction equation

$$\text{species\_108} + \text{species\_44} \xrightarrow{\text{species\_108, species\_44}} \text{species\_109} \tag{188}$$
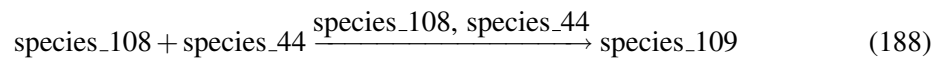
Reactants

Table 284: Properties of each reactant.

Id	Name	SBO
species_108	80S_tRNA_11	
species_44	eEF3_GTP	

Modifiers

Table 285: Properties of each modifier.

Id	Name	SBO
species_108	80S_tRNA_11	
species_44	eEF3_GTP	

Product

Table 286: Properties of each product.

Id	Name	SBO
species_109	80S_tRNA_eEF3_GTP_11	

Kinetic Law

Derived unit contains undeclared units

$$v_{86} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_8} \cdot [\mathrm{species\_108}] \cdot [\mathrm{species\_44}] \qquad (189)$$

9.87 Reaction `reaction_87`

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

Name reaction29_11

Reaction equation

$$\mathrm{species\_109} \xrightarrow{\mathrm{species\_109}} \mathrm{species\_104} + \mathrm{species\_43} + \mathrm{species\_45} \qquad (190)$$
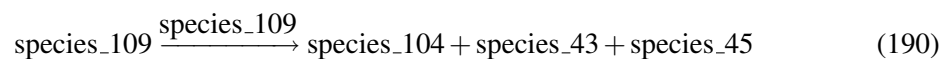
Reactant

Table 287: Properties of each reactant.

Id	Name	SBO
species_109	80S_tRNA_eEF3_GTP_11	

Modifier

Table 288: Properties of each modifier.

Id	Name	SBO
species_109	80S_tRNA_eEF3_GTP_11	

Products

Table 289: Properties of each product.

Id	Name	SBO
species_104	80S_11	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{87} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_109}] \tag{191}$$

9.88 Reaction reaction_88

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_12

Reaction equation

$$\text{species\_40} + \text{species\_110} \underset{}{\overset{\text{species\_40, species\_110, species\_111}}{\rightleftharpoons}} \text{species\_111} \tag{192}$$
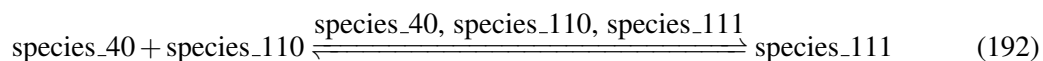
Reactants

Table 290: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_110	80S_12	

Modifiers

Table 291: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_110	80S_12	
species_111	80S_aa-tRNA_eEF1A_GTP_12	

Product

Table 292: Properties of each product.

Id	Name	SBO
species_111	80S_aa-tRNA_eEF1A_GTP_12	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{88} = \; & \text{vol}\,(\text{compartment\_1}) \\
& \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_110}] - \text{parameter\_3} \cdot [\text{species\_111}])
\end{aligned}
\tag{193}
$$

9.89 Reaction reaction_89

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

Name reaction23_12

Reaction equation

$$
\text{species\_111} \xrightarrow{\text{species\_111}} \text{species\_112} + \text{species\_35}
\tag{194}
$$
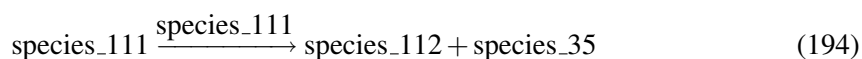
Reactant

Table 293: Properties of each reactant.

Id	Name	SBO
species_111	80S_aa-tRNA_eEF1A_GTP_12	

Modifier

Table 294: Properties of each modifier.

Id	Name	SBO
species_111	80S_aa-tRNA_eEF1A_GTP_12	

Products

Table 295: Properties of each product.

Id	Name	SBO
species_112	80S_aa-tRNA_12	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{89} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_111}] \tag{195}$$

9.90 Reaction reaction_90

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_12

Reaction equation

$$\text{species\_42} + \text{species\_112} \; \xrightleftharpoons{\text{species\_42, species\_112, species\_113}} \; \text{species\_113} \tag{196}$$
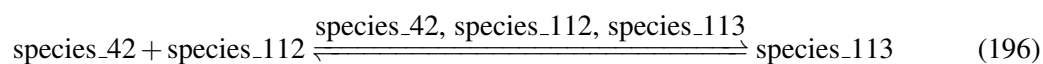
Reactants

Table 296: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_112	80S_aa-tRNA_12	

Modifiers

Table 297: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_112	80S_aa-tRNA_12	
species_113	80S_aa-tRNA_eEF2_GTP_12	

Product

Table 298: Properties of each product.

Id	Name	SBO
species_113	80S_aa-tRNA_eEF2_GTP_12	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{90} = {} & \mathrm{vol}\,(\mathrm{compartment\_1}) \\
& \cdot (\mathrm{parameter\_5} \cdot [\mathrm{species\_42}] \cdot [\mathrm{species\_112}] - \mathrm{parameter\_6} \cdot [\mathrm{species\_113}])
\end{aligned}
\tag{197}
$$

9.91 Reaction `reaction_91`

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

Name reaction26_12

Reaction equation

$$
\mathrm{species\_113} \xrightarrow{\mathrm{species\_113}} \mathrm{species\_120} + \mathrm{species\_41}
\tag{198}
$$

Reactant

Produced by SBML2LATEX
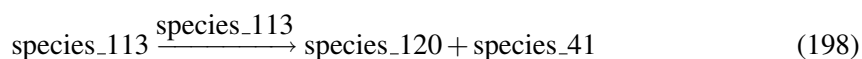
Table 299: Properties of each reactant.

Id	Name	SBO
species_113	80S_aa-tRNA_eEF2_GTP_12	

Modifier

Table 300: Properties of each modifier.

Id	Name	SBO
species_113	80S_aa-tRNA_eEF2_GTP_12	

Products

Table 301: Properties of each product.

Id	Name	SBO
species_120	80S_tRNA_13	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{91} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_7} \cdot [\text{species\_113}] \tag{199}$$

9.92 Reaction `reaction_92`

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

Name reaction28_12

Reaction equation

$$\text{species\_114} + \text{species\_44} \xrightarrow{\text{species\_114, species\_44}} \text{species\_115} \tag{200}$$
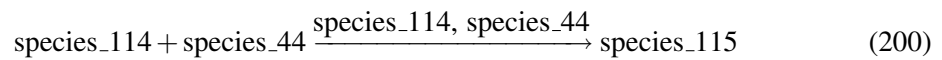
Reactants

Table 302: Properties of each reactant.

Id	Name	SBO
species_114	80S_tRNA_12	
species_44	eEF3_GTP	

Modifiers

Table 303: Properties of each modifier.

Id	Name	SBO
species_114	80S_tRNA_12	
species_44	eEF3_GTP	

Product

Table 304: Properties of each product.

Id	Name	SBO
species_115	80S_tRNA_eEF3_GTP_12	

Kinetic Law

Derived unit contains undeclared units

$$v_{92} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_114}] \cdot [\text{species\_44}] \tag{201}$$

9.93 Reaction reaction_93

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

Name reaction29_12

Reaction equation

$$\text{species\_115} \xrightarrow{\text{species\_115}} \text{species\_110} + \text{species\_43} + \text{species\_45} \tag{202}$$

Reactant

Produced by SBML2LATEX
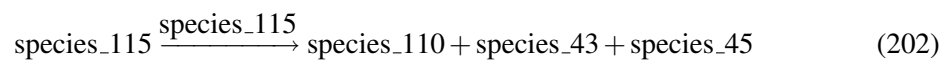
Table 305: Properties of each reactant.

Id	Name	SBO
species_115	80S_tRNA_eEF3_GTP_12	

Modifier

Table 306: Properties of each modifier.

Id	Name	SBO
species_115	80S_tRNA_eEF3_GTP_12	

Products

Table 307: Properties of each product.

Id	Name	SBO
species_110	80S_12	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{93} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_9} \cdot [\mathrm{species\_115}] \qquad (203)$$

9.94 Reaction `reaction_94`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_13

Reaction equation

$$\mathrm{species\_40} + \mathrm{species\_116} \xrightleftharpoons{\mathrm{species\_40,\ species\_116,\ species\_117}} \mathrm{species\_117} \qquad (204)$$

Reactants

Table 308: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_116	80S_13	

Modifiers

Table 309: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_116	80S_13	
species_117	80S_aa-tRNA_eEF1A_GTP_13	

Product

Table 310: Properties of each product.

Id	Name	SBO
species_117	80S_aa-tRNA_eEF1A_GTP_13	

Kinetic Law

Derived unit contains undeclared units

$$v_{94} = \text{vol}\,(\text{compartment\_1}) \\ \cdot\,(\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_116}] - \text{parameter\_3} \cdot [\text{species\_117}]) \tag{205}$$

9.95 Reaction `reaction_95`

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

Name reaction23_13

Reaction equation

$$\text{species\_117} \xrightarrow{\text{species\_117}} \text{species\_118} + \text{species\_35} \tag{206}$$
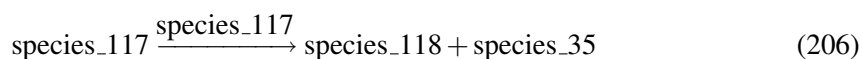
Reactant

Table 311: Properties of each reactant.

Id	Name	SBO
species_117	80S_aa-tRNA_eEF1A_GTP_13	

Modifier

Table 312: Properties of each modifier.

Id	Name	SBO
species_117	80S_aa-tRNA_eEF1A_GTP_13	

Products

Table 313: Properties of each product.

Id	Name	SBO
species_118	80S_aa-tRNA_13	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{95} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_117}] \tag{207}$$

9.96 Reaction `reaction_96`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_13

Reaction equation

$$\text{species\_42} + \text{species\_118} \xrightleftharpoons{\text{species\_42, species\_118, species\_119}} \text{species\_119} \tag{208}$$

Reactants

Table 314: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_118	80S_aa-tRNA_13	

Modifiers

Table 315: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_118	80S_aa-tRNA_13	
species_119	80S_aa-tRNA_eEF2_GTP_13	

Product

Table 316: Properties of each product.

Id	Name	SBO
species_119	80S_aa-tRNA_eEF2_GTP_13	

## Kinetic Law

Derived unit contains undeclared units

$$v_{96} = \text{vol}\,(\text{compartment\_1}) \\ \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_118}] - \text{parameter\_6} \cdot [\text{species\_119}]) \tag{209}$$

9.97 Reaction reaction_97

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

Name reaction26_13

Reaction equation
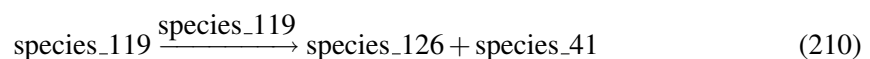
$$\text{species\_119} \xrightarrow{\text{species\_119}} \text{species\_126} + \text{species\_41} \tag{210}$$

Reactant

Modifier

Table 318: Properties of each modifier.

Id	Name	SBO
species_119	80S_aa-tRNA_eEF2_GTP_13	

Products

Table 319: Properties of each product.

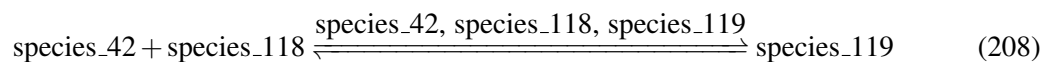| Id	Name	SBO
species_126	80S_tRNA_14	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{97} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_7} \cdot [\text{species\_119}] \tag{211}$$

9.98 Reaction reaction_98

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

Name reaction28_13

Reaction equation

$$\text{species\_120} + \text{species\_44} \xrightarrow{\text{species\_120, species\_44}} \text{species\_121} \tag{212}$$
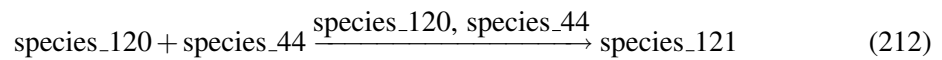
Reactants

Table 320: Properties of each reactant.

Id	Name	SBO
species_120	80S_tRNA_13	
species_44	eEF3_GTP	

Modifiers

Table 321: Properties of each modifier.

Id	Name	SBO
species_120	80S_tRNA_13	
species_44	eEF3_GTP	

Product

Table 322: Properties of each product.

Id	Name	SBO
species_121	80S_tRNA_eEF3_GTP_13	

Kinetic Law

Derived unit contains undeclared units

$$v_{98} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_120}] \cdot [\text{species\_44}] \tag{213}$$

9.99 Reaction reaction_99

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

Name reaction29_13

Reaction equation

$$\text{species\_121} \xrightarrow{\text{species\_121}} \text{species\_116} + \text{species\_43} + \text{species\_45} \tag{214}$$
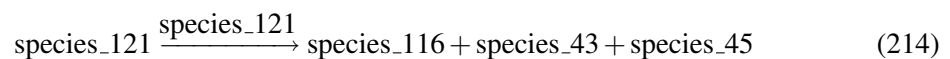
Reactant

Table 323: Properties of each reactant.

Id	Name	SBO
species_121	80S_tRNA_eEF3_GTP_13	

Modifier

Table 324: Properties of each modifier.

Id	Name	SBO
species_121	80S_tRNA_eEF3_GTP_13	

Products

Table 325: Properties of each product.

Id	Name	SBO
species_116	80S_13	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{99} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_9} \cdot [\text{species\_121}] \tag{215}$$

9.100 Reaction `reaction_100`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_14

Reaction equation

$$\text{species\_40} + \text{species\_122} \xrightleftharpoons{\text{species\_40, species\_122, species\_123}} \text{species\_123} \tag{216}$$
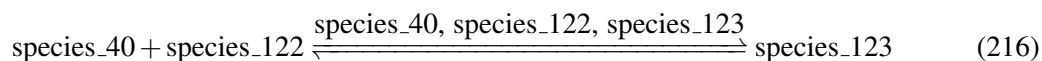
Reactants

Table 326: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_122	80S_14	

Modifiers

Table 327: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_122	80S_14	
species_123	80S_aa-tRNA_eEF1A_GTP_14	

Product

Table 328: Properties of each product.

Id	Name	SBO
species_123	80S_aa-tRNA_eEF1A_GTP_14	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{100} = {} & \mathrm{vol}\,(\mathrm{compartment\_1}) \\
& \cdot (\mathrm{parameter\_2} \cdot [\mathrm{species\_40}] \cdot [\mathrm{species\_122}] - \mathrm{parameter\_3} \cdot [\mathrm{species\_123}])
\end{aligned}
\tag{217}
$$

9.101 Reaction `reaction_101`

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

Name reaction23_14

Reaction equation

$$
\mathrm{species\_123} \xrightarrow{\mathrm{species\_123}} \mathrm{species\_124} + \mathrm{species\_35}
\tag{218}
$$
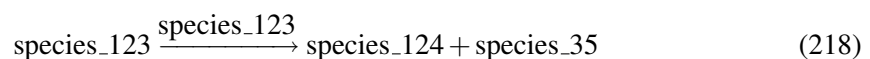
Reactant

Table 329: Properties of each reactant.

Id	Name	SBO
species_123	80S_aa-tRNA_eEF1A_GTP_14	

Modifier

Table 330: Properties of each modifier.

Id	Name	SBO
species_123	80S_aa-tRNA_eEF1A_GTP_14	

Products

Table 331: Properties of each product.

Id	Name	SBO
species_124	80S_aa-tRNA_14	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{101} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_123}] \qquad (219)$$

9.102 Reaction `reaction_102`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_14

Reaction equation

$$\text{species\_42} + \text{species\_124} \xrightleftharpoons{\text{species\_42, species\_124, species\_125}} \text{species\_125} \qquad (220)$$
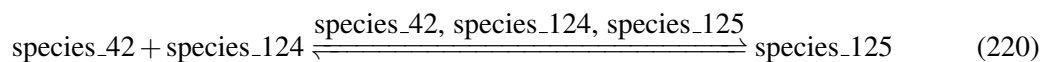
Reactants

Table 332: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_124	80S_aa-tRNA_14	

Modifiers

Table 333: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_124	80S_aa-tRNA_14	
species_125	80S_aa-tRNA_eEF2_GTP_14	

Product

Table 334: Properties of each product.

Id	Name	SBO
species_125	80S_aa-tRNA_eEF2_GTP_14	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{102} = \text{vol}\,(\text{compartment\_1}) \\
\cdot\,(\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_124}] - \text{parameter\_6} \cdot [\text{species\_125}])
\end{aligned}
\tag{221}
$$

9.103 Reaction `reaction_103`

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

Name reaction26_14

Reaction equation

$$
\text{species\_125} \xrightarrow{\text{species\_125}} \text{species\_132} + \text{species\_41}
\tag{222}
$$
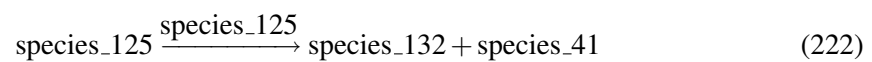
Reactant

Table 335: Properties of each reactant.

Id	Name	SBO
species_125	80S_aa-tRNA_eEF2_GTP_14	

Modifier

Table 336: Properties of each modifier.

Id	Name	SBO
species_125	80S_aa-tRNA_eEF2_GTP_14	

Products

Table 337: Properties of each product.

Id	Name	SBO
species_132	80S_tRNA_15	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{103} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_7} \cdot [\mathrm{species\_125}] \tag{223}$$

9.104 Reaction `reaction_104`

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

Name reaction28_14

Reaction equation

$$\mathrm{species\_126} + \mathrm{species\_44} \xrightarrow{\mathrm{species\_126,\ species\_44}} \mathrm{species\_127} \tag{224}$$
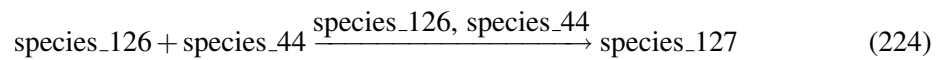
Reactants

Table 338: Properties of each reactant.

Id	Name	SBO
species_126	80S_tRNA_14	
species_44	eEF3_GTP	

Modifiers

Table 339: Properties of each modifier.

Id	Name	SBO
species_126	80S_tRNA_14	
species_44	eEF3_GTP	

Product

Table 340: Properties of each product.

Id	Name	SBO
species_127	80S_tRNA_eEF3_GTP_14	

Kinetic Law

Derived unit contains undeclared units

$$v_{104} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_126}] \cdot [\text{species\_44}] \tag{225}$$

9.105 Reaction `reaction_105`

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

Name reaction29_14

Reaction equation

$$\text{species\_127} \xrightarrow{\text{species\_127}} \text{species\_122} + \text{species\_43} + \text{species\_45} \tag{226}$$

Reactant

Produced by SBML2LATEX
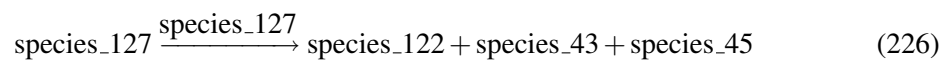
Table 341: Properties of each reactant.

Id	Name	SBO
species_127	80S_tRNA_eEF3_GTP_14	

Modifier

Table 342: Properties of each modifier.

Id	Name	SBO
species_127	80S_tRNA_eEF3_GTP_14	

Products

Table 343: Properties of each product.

Id	Name	SBO
species_122	80S_14	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{105} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_127}] \qquad (227)$$

9.106 Reaction `reaction_106`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_15

Reaction equation

$$\text{species\_40} + \text{species\_128} \xrightleftharpoons[]{\text{species\_40, species\_128, species\_129}} \text{species\_129} \qquad (228)$$
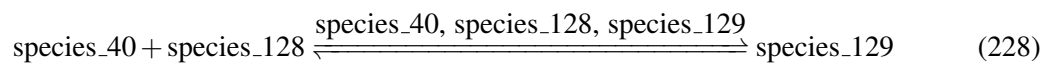
Reactants

Table 344: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_128	80S_15	

Modifiers

Table 345: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_128	80S_15	
species_129	80S_aa-tRNA_eEF1A_GTP_15	

Product

Table 346: Properties of each product.

Id	Name	SBO
species_129	80S_aa-tRNA_eEF1A_GTP_15	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{106} = \; & \text{vol}\,(\text{compartment\_1}) \\
& \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_128}] - \text{parameter\_3} \cdot [\text{species\_129}])
\end{aligned}
\tag{229}
$$

9.107 Reaction `reaction_107`

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

Name reaction23_15

Reaction equation

$$
\text{species\_129} \xrightarrow{\text{species\_129}} \text{species\_130} + \text{species\_35}
\tag{230}
$$
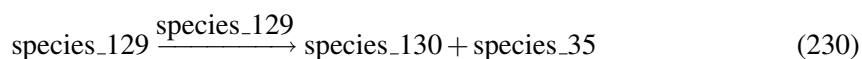
Reactant

Table 347: Properties of each reactant.

Id	Name	SBO
species_129	80S_aa-tRNA_eEF1A_GTP_15	

Modifier

Table 348: Properties of each modifier.

Id	Name	SBO
species_129	80S_aa-tRNA_eEF1A_GTP_15	

Products

Table 349: Properties of each product.

Id	Name	SBO
species_130	80S_aa-tRNA_15	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{107} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_129}] \tag{231}$$

9.108 Reaction `reaction_108`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_15

Reaction equation

$$\text{species\_42} + \text{species\_130} \xrightleftharpoons{\text{species\_42, species\_130, species\_131}} \text{species\_131} \tag{232}$$
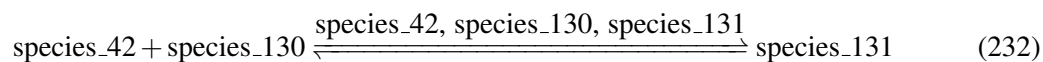
Reactants

Table 350: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_130	80S_aa-tRNA_15	

Modifiers

Table 351: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_130	80S_aa-tRNA_15	
species_131	80S_aa-tRNA_eEF2_GTP_15	

Product

Table 352: Properties of each product.

Id	Name	SBO
species_131	80S_aa-tRNA_eEF2_GTP_15	

Kinetic Law

Derived unit contains undeclared units

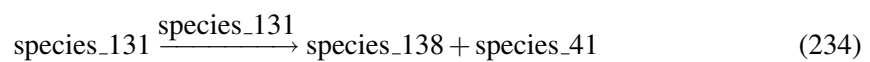$$
\begin{aligned}
v_{108} = {} & \text{vol}\,(\text{compartment\_1}) \\
& \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_130}] - \text{parameter\_6} \cdot [\text{species\_131}])
\end{aligned}
\tag{233}
$$

9.109 Reaction `reaction_109`

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

Name reaction26_15

Reaction equation

$$
\text{species\_131} \xrightarrow{\text{species\_131}} \text{species\_138} + \text{species\_41}
\tag{234}
$$

Reactant

Table 353: Properties of each reactant.

Id	Name	SBO
species_131	80S_aa-tRNA_eEF2_GTP_15	

Modifier

Table 354: Properties of each modifier.

Id	Name	SBO
species_131	80S_aa-tRNA_eEF2_GTP_15	

Products

Table 355: Properties of each product.

Id	Name	SBO
species_138	80S_tRNA_16	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{109} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_7} \cdot [\mathrm{species\_131}] \tag{235}$$

9.110 Reaction `reaction_110`

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

Name reaction28_15

Reaction equation

$$\mathrm{species\_132} + \mathrm{species\_44} \xrightarrow{\mathrm{species\_132,\ species\_44}} \mathrm{species\_133} \tag{236}$$
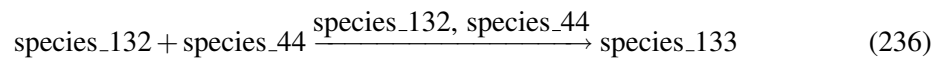
Reactants

Table 356: Properties of each reactant.

Id	Name	SBO
species_132	80S_tRNA_15	
species_44	eEF3_GTP	

Modifiers

Table 357: Properties of each modifier.

Id	Name	SBO
species_132	80S_tRNA_15	
species_44	eEF3_GTP	

Product

Table 358: Properties of each product.

Id	Name	SBO
species_133	80S_tRNA_eEF3_GTP_15	

Kinetic Law

Derived unit contains undeclared units

$$v_{110} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_132}] \cdot [\text{species\_44}] \tag{237}$$

9.111 Reaction reaction_111

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

Name reaction29_15

Reaction equation

$$\text{species\_133} \xrightarrow{\text{species\_133}} \text{species\_128} + \text{species\_43} + \text{species\_45} \tag{238}$$

Reactant

Produced by SBML2LATEX
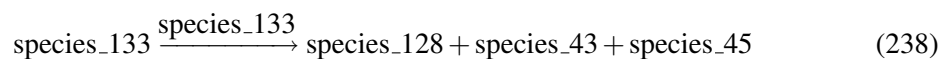
Table 359: Properties of each reactant.

Id	Name	SBO
species_133	80S_tRNA_eEF3_GTP_15	

Modifier

Table 360: Properties of each modifier.

Id	Name	SBO
species_133	80S_tRNA_eEF3_GTP_15	

Products

Table 361: Properties of each product.

Id	Name	SBO
species_128	80S_15	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{111} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_9} \cdot [\mathrm{species\_133}] \tag{239}$$

9.112 Reaction `reaction_112`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_16

Reaction equation

$$\mathrm{species\_40} + \mathrm{species\_134} \underset{}{\overset{\mathrm{species\_40,\ species\_134,\ species\_135}}{\rightleftharpoons}} \mathrm{species\_135} \tag{240}$$

Reactants

Table 362: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_134	80S_16	

Modifiers

Table 363: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_134	80S_16	
species_135	80S_aa-tRNA_eEF1A_GTP_16	

Product

Table 364: Properties of each product.

Id	Name	SBO
species_135	80S_aa-tRNA_eEF1A_GTP_16	

Kinetic Law

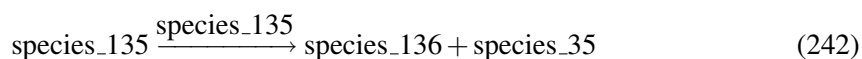**Derived unit** contains undeclared units

$$v_{112} = \mathrm{vol}\,(\text{compartment\_1}) \\ \cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_134}] - \text{parameter\_3} \cdot [\text{species\_135}]) \tag{241}$$

9.113 Reaction reaction_113

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

Name reaction23_16

Reaction equation

$$\text{species\_135} \xrightarrow{\text{species\_135}} \text{species\_136} + \text{species\_35} \tag{242}$$

Reactant

Produced by SBML2LATEX

Table 365: Properties of each reactant.

Id	Name	SBO
species_135	80S_aa-tRNA_eEF1A_GTP_16	

Modifier

Table 366: Properties of each modifier.

Id	Name	SBO
species_135	80S_aa-tRNA_eEF1A_GTP_16	

Products

Table 367: Properties of each product.

Id	Name	SBO
species_136	80S_aa-tRNA_16	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{113} = \mathrm{vol}\left(\mathrm{compartment\_1}\right) \cdot \mathrm{parameter\_4} \cdot [\mathrm{species\_135}] \tag{243}$$

9.114 Reaction `reaction_114`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_16

Reaction equation

$$\mathrm{species\_42} + \mathrm{species\_136} \xrightleftharpoons{\mathrm{species\_42,\ species\_136,\ species\_137}} \mathrm{species\_137} \tag{244}$$
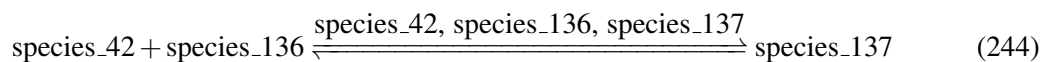
Reactants

Table 368: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_136	80S_aa-tRNA_16	

Modifiers

Table 369: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_136	80S_aa-tRNA_16	
species_137	80S_aa-tRNA_eEF2_GTP_16	

Product

Table 370: Properties of each product.

Id	Name	SBO
species_137	80S_aa-tRNA_eEF2_GTP_16	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{114} = \ & \mathrm{vol}\,(\mathrm{compartment\_1}) \\
& \cdot (\mathrm{parameter\_5} \cdot [\mathrm{species\_42}] \cdot [\mathrm{species\_136}] - \mathrm{parameter\_6} \cdot [\mathrm{species\_137}])
\end{aligned}
\tag{245}
$$

9.115 Reaction `reaction_115`

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

Name reaction26_16

Reaction equation

$$
\mathrm{species\_137} \xrightarrow{\mathrm{species\_137}} \mathrm{species\_144} + \mathrm{species\_41}
\tag{246}
$$
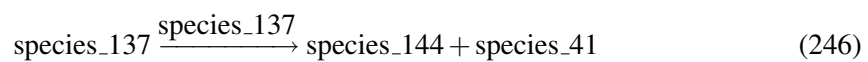
Reactant

Table 371: Properties of each reactant.

Id	Name	SBO
species_137	80S_aa-tRNA_eEF2_GTP_16	

Modifier

Table 372: Properties of each modifier.

Id	Name	SBO
species_137	80S_aa-tRNA_eEF2_GTP_16	

Products

Table 373: Properties of each product.

Id	Name	SBO
species_144	80S_tRNA_17	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{115} = \text{vol} \left(\text{compartment\_1} \right) \cdot \text{parameter\_7} \cdot [\text{species\_137}] \tag{247}$$

9.116 Reaction `reaction_116`

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

Name reaction28_16

Reaction equation

$$\text{species\_138} + \text{species\_44} \xrightarrow{\text{species\_138, species\_44}} \text{species\_139} \tag{248}$$
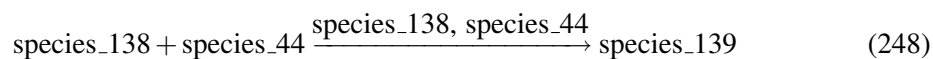
Reactants

Table 374: Properties of each reactant.

Id	Name	SBO
species_138	80S_tRNA_16	
species_44	eEF3_GTP	

Modifiers

Table 375: Properties of each modifier.

Id	Name	SBO
species_138	80S_tRNA_16	
species_44	eEF3_GTP	

Product

Table 376: Properties of each product.

Id	Name	SBO
species_139	80S_tRNA_eEF3_GTP_16	

Kinetic Law

Derived unit contains undeclared units

$$v_{116} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_138}] \cdot [\text{species\_44}] \tag{249}$$

9.117 Reaction reaction_117

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

Name reaction29_16

Reaction equation

$$\text{species\_139} \xrightarrow{\text{species\_139}} \text{species\_134} + \text{species\_43} + \text{species\_45} \tag{250}$$
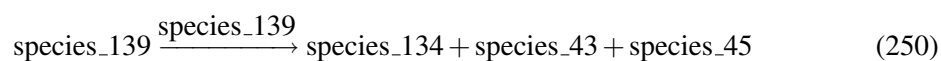
Reactant

Table 377: Properties of each reactant.

Id	Name	SBO
species_139	80S_tRNA_eEF3_GTP_16	

Modifier

Table 378: Properties of each modifier.

Id	Name	SBO
species_139	80S_tRNA_eEF3_GTP_16	

Products

Table 379: Properties of each product.

Id	Name	SBO
species_134	80S_16	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{117} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_139}] \tag{251}$$

9.118 Reaction `reaction_118`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_17

Reaction equation

$$\text{species\_40} + \text{species\_140} \xrightleftharpoons{\text{species\_40, species\_140, species\_141}} \text{species\_141} \tag{252}$$
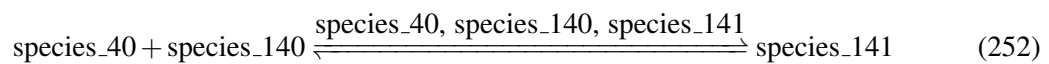
Reactants

Table 380: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_140	80S_17	

Modifiers

Table 381: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_140	80S_17	
species_141	80S_aa-tRNA_eEF1A_GTP_17	

Product

Table 382: Properties of each product.

Id	Name	SBO
species_141	80S_aa-tRNA_eEF1A_GTP_17	

Kinetic Law

Derived unit contains undeclared units

$$
\begin{aligned}
v_{118} = {}& \mathrm{vol}\,(\mathrm{compartment\_1}) \\
& \cdot (\mathrm{parameter\_2} \cdot [\mathrm{species\_40}] \cdot [\mathrm{species\_140}] - \mathrm{parameter\_3} \cdot [\mathrm{species\_141}])
\end{aligned}
\tag{253}
$$

9.119 Reaction `reaction_119`

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

Name reaction23_17

Reaction equation

$$
\mathrm{species\_141} \xrightarrow{\mathrm{species\_141}} \mathrm{species\_142} + \mathrm{species\_35}
\tag{254}
$$
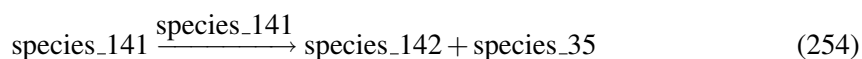
Reactant

Table 383: Properties of each reactant.

Id	Name	SBO
species_141	80S_aa-tRNA_eEF1A_GTP_17	

Modifier

Table 384: Properties of each modifier.

Id	Name	SBO
species_141	80S_aa-tRNA_eEF1A_GTP_17	

Products

Table 385: Properties of each product.

Id	Name	SBO
species_142	80S_aa-tRNA_17	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{119} = \mathrm{vol}\left(\mathrm{compartment\_1}\right) \cdot \mathrm{parameter\_4} \cdot [\mathrm{species\_141}] \tag{255}$$

9.120 Reaction reaction_120

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_17

Reaction equation

$$\mathrm{species\_42} + \mathrm{species\_142} \underset{\xrightarrow{\hspace{4cm}}}{\overset{\mathrm{species\_42,\ species\_142,\ species\_143}}{\rightleftharpoons}} \mathrm{species\_143} \tag{256}$$
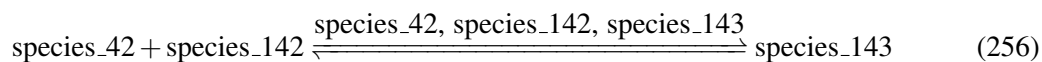
Reactants

Table 386: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_142	80S_aa-tRNA_17	

Modifiers

Table 387: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_142	80S_aa-tRNA_17	
species_143	80S_aa-tRNA_eEF2_GTP_17	

Product

Table 388: Properties of each product.

Id	Name	SBO
species_143	80S_aa-tRNA_eEF2_GTP_17	

Kinetic Law

Derived unit contains undeclared units

$$v_{120} = \text{vol}\,(\text{compartment\_1}) \\ \cdot\,(\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_142}] - \text{parameter\_6} \cdot [\text{species\_143}]) \tag{257}$$

9.121 Reaction `reaction_121`

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

Name reaction26_17

Reaction equation
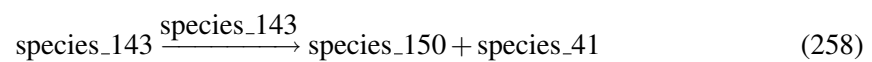
$$\text{species\_143} \xrightarrow{\text{species\_143}} \text{species\_150} + \text{species\_41} \tag{258}$$

Reactant

Modifier

Table 390: Properties of each modifier.

Id	Name	SBO
species_143	80S_aa-tRNA_eEF2_GTP_17	

Products

Table 391: Properties of each product.

Id	Name	SBO
species_150	80S_tRNA_18	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{121} = \text{vol} \left(\text{compartment\_1} \right) \cdot \text{parameter\_7} \cdot [\text{species\_143}] \tag{259}$$

9.122 Reaction `reaction_122`

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

Name reaction28_17

Reaction equation

$$\text{species\_144} + \text{species\_44} \xrightarrow{\text{species\_144, species\_44}} \text{species\_145} \tag{260}$$
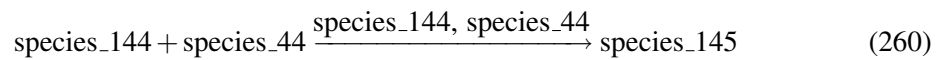
Reactants

Table 392: Properties of each reactant.

Id	Name	SBO
species_144	80S_tRNA_17	
species_44	eEF3_GTP	

Modifiers

Table 393: Properties of each modifier.

Id	Name	SBO
species_144	80S_tRNA_17	
species_44	eEF3_GTP	

Product

Table 394: Properties of each product.

Id	Name	SBO
species_145	80S_tRNA_eEF3_GTP_17	

Kinetic Law

Derived unit contains undeclared units

$$v_{122} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_144}] \cdot [\text{species\_44}] \quad (261)$$

9.123 Reaction reaction_123

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

Name reaction29_17

Reaction equation

$$\text{species\_145} \xrightarrow{\text{species\_145}} \text{species\_140} + \text{species\_43} + \text{species\_45} \quad (262)$$
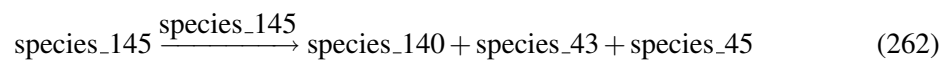
Reactant

Table 395: Properties of each reactant.

Id	Name	SBO
species_145	80S_tRNA_eEF3_GTP_17	

Modifier

Table 396: Properties of each modifier.

Id	Name	SBO
species_145	80S_tRNA_eEF3_GTP_17	

Products

Table 397: Properties of each product.

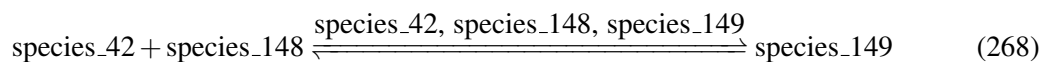| Id	Name	SBO
species_140	80S_17	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{123} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_145}] \qquad (263)$$

9.124 Reaction `reaction_124`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_18

Reaction equation

$$\text{species\_40} + \text{species\_146} \underset{}{\overset{\text{species\_40, species\_146, species\_147}}{\rightleftharpoons}} \text{species\_147} \qquad (264)$$

Reactants

Table 398: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_146	80S_18	

Modifiers

Table 399: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_146	80S_18	
species_147	80S_aa-tRNA_eEF1A_GTP_18	

Product

Table 400: Properties of each product.

Id	Name	SBO
species_147	80S_aa-tRNA_eEF1A_GTP_18	

Kinetic Law

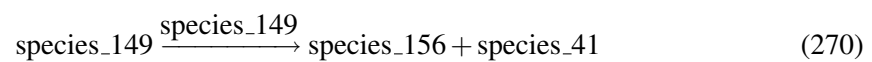**Derived unit** contains undeclared units

$$
\begin{aligned}
v_{124} = \ &\text{vol}\,(\text{compartment\_1}) \\
&\cdot (\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_146}] - \text{parameter\_3} \cdot [\text{species\_147}])
\end{aligned}
\tag{265}
$$

9.125 Reaction `reaction_125`

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

Name reaction23_18

Reaction equation

$$
\text{species\_147} \xrightarrow{\text{species\_147}} \text{species\_148} + \text{species\_35}
\tag{266}
$$
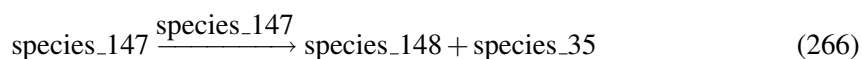
Reactant

Table 401: Properties of each reactant.

Id	Name	SBO
species_147	80S_aa-tRNA_eEF1A_GTP_18	

Modifier

Table 402: Properties of each modifier.

Id	Name	SBO
species_147	80S_aa-tRNA_eEF1A_GTP_18	

Products

Table 403: Properties of each product.

Id	Name	SBO
species_148	80S_aa-tRNA_18	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{125} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_4} \cdot [\mathrm{species\_147}] \tag{267}$$

9.126 Reaction `reaction_126`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_18

Reaction equation

$$\mathrm{species\_42} + \mathrm{species\_148} \xrightleftharpoons{\mathrm{species\_42,\ species\_148,\ species\_149}} \mathrm{species\_149} \tag{268}$$

Reactants

Table 404: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_148	80S_aa-tRNA_18	

Modifiers

Table 405: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_148	80S_aa-tRNA_18	
species_149	80S_aa-tRNA_eEF2_GTP_18	

Product

Table 406: Properties of each product.

Id	Name	SBO
species_149	80S_aa-tRNA_eEF2_GTP_18	

Kinetic Law

Derived unit contains undeclared units

$$v_{126} = \text{vol}\,(\text{compartment\_1}) \\ \cdot (\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_148}] - \text{parameter\_6} \cdot [\text{species\_149}]) \tag{269}$$

9.127 Reaction `reaction_127`

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

Name reaction26_18

Reaction equation

$$\text{species\_149} \xrightarrow{\text{species\_149}} \text{species\_156} + \text{species\_41} \tag{270}$$

Reactant

Produced by SBML2LATEX

Table 407: Properties of each reactant.

Id	Name	SBO
species_149	80S_aa-tRNA_eEF2_GTP_18	

Modifier

Table 408: Properties of each modifier.

Id	Name	SBO
species_149	80S_aa-tRNA_eEF2_GTP_18	

Products

Table 409: Properties of each product.

Id	Name	SBO
species_156	80S_tRNA_19	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{127} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_7} \cdot [\text{species\_149}] \tag{271}$$

9.128 Reaction `reaction_128`

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

Name reaction28_18

Reaction equation

$$\text{species\_150} + \text{species\_44} \xrightarrow{\text{species\_150, species\_44}} \text{species\_151} \tag{272}$$
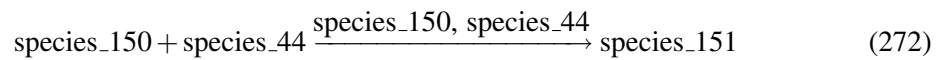
Reactants

Table 410: Properties of each reactant.

Id	Name	SBO
species_150	80S_tRNA_18	
species_44	eEF3_GTP	

Modifiers

Table 411: Properties of each modifier.

Id	Name	SBO
species_150	80S_tRNA_18	
species_44	eEF3_GTP	

Product

Table 412: Properties of each product.

Id	Name	SBO
species_151	80S_tRNA_eEF3_GTP_18	

Kinetic Law

Derived unit contains undeclared units

$$v_{128} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_150}] \cdot [\text{species\_44}] \qquad (273)$$

9.129 Reaction `reaction_129`

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

Name reaction29_18

Reaction equation

$$\text{species\_151} \xrightarrow{\text{species\_151}} \text{species\_146} + \text{species\_43} + \text{species\_45} \qquad (274)$$
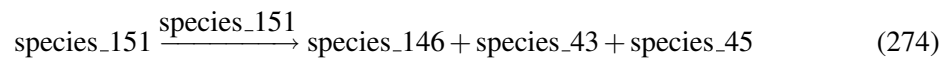
Reactant

Table 413: Properties of each reactant.

Id	Name	SBO
species_151	80S_tRNA_eEF3_GTP_18	

Modifier

Table 414: Properties of each modifier.

Id	Name	SBO
species_151	80S_tRNA_eEF3_GTP_18	

Products

Table 415: Properties of each product.

Id	Name	SBO
species_146	80S_18	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{129} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_151}] \tag{275}$$

9.130 Reaction `reaction_130`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction22_19

Reaction equation

$$\text{species\_40} + \text{species\_152} \xrightleftharpoons{\text{species\_40, species\_152, species\_153}} \text{species\_153} \tag{276}$$

Reactants

Table 416: Properties of each reactant.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_152	80S_19	

Modifiers

Table 417: Properties of each modifier.

Id	Name	SBO
species_40	aa-tRNA_eEF1A_GTP	
species_152	80S_19	
species_153	80S_aa-tRNA_eEF1A_GTP_19	

Product

Table 418: Properties of each product.

Id	Name	SBO
species_153	80S_aa-tRNA_eEF1A_GTP_19	

Kinetic Law

Derived unit contains undeclared units

$$v_{130} = \text{vol}\,(\text{compartment\_1}) \\ \cdot\,(\text{parameter\_2} \cdot [\text{species\_40}] \cdot [\text{species\_152}] - \text{parameter\_3} \cdot [\text{species\_153}]) \tag{277}$$

9.131 Reaction reaction_131

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

Name reaction23_19

Reaction equation

$$\text{species\_153} \xrightarrow{\text{species\_153}} \text{species\_154} + \text{species\_35} \tag{278}$$
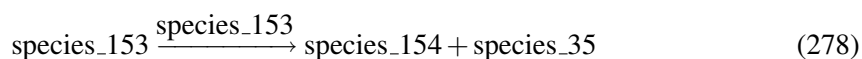
Reactant

Table 419: Properties of each reactant.

Id	Name	SBO
species_153	80S_aa-tRNA_eEF1A_GTP_19	

Modifier

Table 420: Properties of each modifier.

Id	Name	SBO
species_153	80S_aa-tRNA_eEF1A_GTP_19	

Products

Table 421: Properties of each product.

Id	Name	SBO
species_154	80S_aa-tRNA_19	
species_35	eEF1A_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{131} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_4} \cdot [\text{species\_153}] \tag{279}$$

9.132 Reaction `reaction_132`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction25_19

Reaction equation

$$\text{species\_42} + \text{species\_154} \xrightleftharpoons{\text{species\_42, species\_154, species\_155}} \text{species\_155} \tag{280}$$

Reactants

Table 422: Properties of each reactant.

Id	Name	SBO
species_42	eEF2_GTP	
species_154	80S_aa-tRNA_19	

Modifiers

Table 423: Properties of each modifier.

Id	Name	SBO
species_42	eEF2_GTP	
species_154	80S_aa-tRNA_19	
species_155	80S_aa-tRNA_eEF2_GTP_19	

Product

Table 424: Properties of each product.

Id	Name	SBO
species_155	80S_aa-tRNA_eEF2_GTP_19	

Kinetic Law

Derived unit contains undeclared units

$$v_{132} = \text{vol}\,(\text{compartment\_1}) \\ \cdot\,(\text{parameter\_5} \cdot [\text{species\_42}] \cdot [\text{species\_154}] - \text{parameter\_6} \cdot [\text{species\_155}]) \tag{281}$$

9.133 Reaction `reaction_133`

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

Name reaction26_19

Reaction equation

$$\text{species\_155} \xrightarrow{\text{species\_155}} \text{species\_159} + \text{species\_41} \tag{282}$$

Reactant

Produced by SBML2LATEX
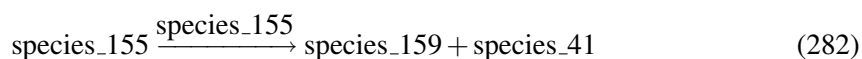
Table 425: Properties of each reactant.

Id	Name	SBO
species_155	80S_aa-tRNA_eEF2_GTP_19	

Modifier

Table 426: Properties of each modifier.

Id	Name	SBO
species_155	80S_aa-tRNA_eEF2_GTP_19	

Products

Table 427: Properties of each product.

Id	Name	SBO
species_159	80S_tRNA_20	
species_41	eEF2_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{133} = \mathrm{vol}\,(\mathrm{compartment\_1}) \cdot \mathrm{parameter\_7} \cdot [\mathrm{species\_155}] \qquad (283)$$

9.134 Reaction `reaction_134`

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

Name reaction28_19

Reaction equation

$$\mathrm{species\_156} + \mathrm{species\_44} \xrightarrow{\mathrm{species\_156,\ species\_44}} \mathrm{species\_157} \qquad (284)$$
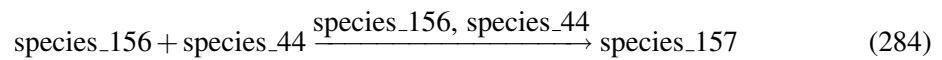
Reactants

Table 428: Properties of each reactant.

Id	Name	SBO
species_156	80S_tRNA_19	
species_44	eEF3_GTP	

Modifiers

Table 429: Properties of each modifier.

Id	Name	SBO
species_156	80S_tRNA_19	
species_44	eEF3_GTP	

Product

Table 430: Properties of each product.

Id	Name	SBO
species_157	80S_tRNA_eEF3_GTP_19	

Kinetic Law

Derived unit contains undeclared units

$$v_{134} = \text{vol}(\text{compartment\_1}) \cdot \text{parameter\_8} \cdot [\text{species\_156}] \cdot [\text{species\_44}] \tag{285}$$

9.135 Reaction `reaction_135`

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

Name reaction29_19

Reaction equation

$$\text{species\_157} \xrightarrow{\text{species\_157}} \text{species\_152} + \text{species\_43} + \text{species\_45} \tag{286}$$
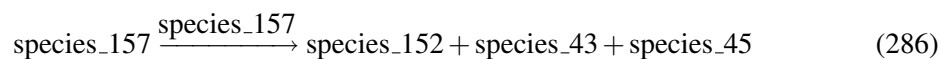
Reactant

Table 431: Properties of each reactant.

Id	Name	SBO
species_157	80S_tRNA_eEF3_GTP_19	

Modifier

Table 432: Properties of each modifier.

Id	Name	SBO
species_157	80S_tRNA_eEF3_GTP_19	

Products

Table 433: Properties of each product.

Id	Name	SBO
species_152	80S_19	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{135} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_157}] \tag{287}$$

9.136 Reaction `reaction_136`

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

Name reaction28_20

Reaction equation

$$\text{species\_159} + \text{species\_44} \xrightarrow{\text{species\_159, species\_44}} \text{species\_160} \tag{288}$$
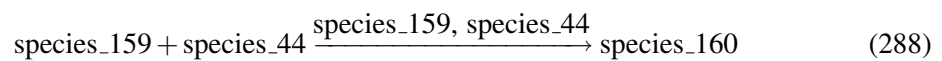
Reactants

Table 434: Properties of each reactant.

Id	Name	SBO
species_159	80S_tRNA_20	
species_44	eEF3_GTP	

Modifiers

Table 435: Properties of each modifier.

Id	Name	SBO
species_159	80S_tRNA_20	
species_44	eEF3_GTP	

Product

Table 436: Properties of each product.

Id	Name	SBO
species_160	80S_tRNA_eEF3_GTP_20	

Kinetic Law

Derived unit contains undeclared units

$$v_{136} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{parameter\_8} \cdot [\text{species\_159}] \cdot [\text{species\_44}] \qquad (289)$$

9.137 Reaction reaction_137

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

Name reaction29_20

Reaction equation

$$\text{species\_160} \xrightarrow{\text{species\_160}} \text{species\_158} + \text{species\_43} + \text{species\_45} \qquad (290)$$
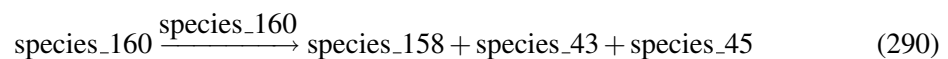
Reactant

Table 437: Properties of each reactant.

Id	Name	SBO
species_160	80S_tRNA_eEF3_GTP_20	

Modifier

Table 438: Properties of each modifier.

Id	Name	SBO
species_160	80S_tRNA_eEF3_GTP_20	

Products

Table 439: Properties of each product.

Id	Name	SBO
species_158	80S_20	
species_43	eEF3_GDP	
species_45	tRNA	

Kinetic Law

Derived unit contains undeclared units

$$v_{137} = \text{vol}\,(\text{compartment\_1}) \cdot \text{parameter\_9} \cdot [\text{species\_160}] \tag{291}$$

9.138 Reaction reaction_138

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

Name reaction30

Reaction equation

$$\text{species\_161} \xrightleftharpoons{\text{species\_161, species\_162}} \text{species\_162} \tag{292}$$
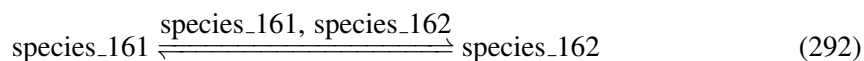
Reactant

Table 440: Properties of each reactant.

Id	Name	SBO
species_161	eRF3_GDP	

Modifiers

Table 441: Properties of each modifier.

Id	Name	SBO
species_161	eRF3_GDP	
species_162	eRF3_GTP	

Product

Table 442: Properties of each product.

Id	Name	SBO
species_162	eRF3_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{138} = \text{vol}\,(\text{compartment\_1}) \cdot (\text{k1} \cdot [\text{species\_161}] - \text{k2} \cdot [\text{species\_162}]) \tag{293}$$

Table 443: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		14200.8		☑
k2	k2		18032.6		☑

9.139 Reaction `reaction_139`

This is a reversible reaction of two reactants forming one product influenced by three modifiers.

Name reaction31

Reaction equation

$$\text{species\_163} + \text{species\_162} \xrightleftharpoons{\text{species\_163, species\_162, species\_164}} \text{species\_164} \qquad (294)$$

Reactants

Table 444: Properties of each reactant.

Id	Name	SBO
species_163	eRF1	
species_162	eRF3_GTP	

Modifiers

Table 445: Properties of each modifier.

Id	Name	SBO
species_163	eRF1	
species_162	eRF3_GTP	
species_164	eRF1_eRF3_GTP	

Product

Table 446: Properties of each product.

Id	Name	SBO
species_164	eRF1_eRF3_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{139} = \text{vol}\left(\text{compartment\_1}\right) \cdot \left(\text{k1} \cdot [\text{species\_163}] \cdot [\text{species\_162}] - \text{k2} \cdot [\text{species\_164}]\right) \qquad (295)$$

Table 447: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$1.6 \cdot 10^9$		☑
k2	k2		35378.100		☑

9.140 Reaction `reaction_140`

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

Name reaction32

Reaction equation

$$\text{species\_164} + \text{species\_158} \xrightarrow{\text{species\_164, species\_158}} \text{species\_165} \tag{296}$$
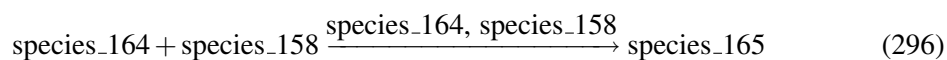
Reactants

Table 448: Properties of each reactant.

Id	Name	SBO
species_164	eRF1_eRF3_GTP	
species_158	80S_20	

Modifiers

Table 449: Properties of each modifier.

Id	Name	SBO
species_164	eRF1_eRF3_GTP	
species_158	80S_20	

Product

Table 450: Properties of each product.

Id	Name	SBO
species_165	80S_eRF1_eRF3_GTP	

Kinetic Law

Derived unit contains undeclared units

$$v_{140} = \text{vol}\left(\text{compartment\_1}\right) \cdot \text{k1} \cdot [\text{species\_164}] \cdot [\text{species\_158}] \tag{297}$$

Table 451: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$1.53068 \cdot 10^8$		☑

9.141 Reaction `reaction_141`

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

Name reaction33

Reaction equation

$$\text{species\_165} \xrightarrow{\text{species\_165}} \text{species\_13} + \text{species\_34} + \text{species\_163} + \text{species\_161} \qquad (298)$$
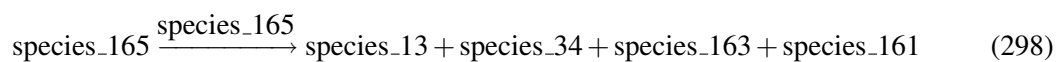
Reactant

Table 452: Properties of each reactant.

Id	Name	SBO
species_165	80S_eRF1_eRF3_GTP	

Modifier

Table 453: Properties of each modifier.

Id	Name	SBO
species_165	80S_eRF1_eRF3_GTP	

Products

Table 454: Properties of each product.

Id	Name	SBO
species_13	40S	
species_34	60S	
species_163	eRF1	
species_161	eRF3_GDP	

Kinetic Law

Derived unit contains undeclared units

$$v_{141} = \text{vol}\,(\text{compartment\_1}) \cdot \text{k1} \cdot [\text{species\_165}] \tag{299}$$

Table 455: Properties of each parameter.

Id	Name	SBO	Value	Unit	Constant
k1	k1		$3.5491 \cdot 10^9$		☑

10 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.

Identifiers for kinetic laws highlighted in gray cannot be verified to evaluate to units of SBML substance per time. As a result, some SBML interpreters may not be able to verify the consistency of the units on quantities in the model. Please check if

- parameters without an unit definition are involved or

- volume correction is necessary because the hasOnlySubstanceUnits flag may be set to false and spacialDimensions > 0 for certain species.

10.1 Species species_1

Name eIF2_GDP

Initial concentration $1.17510804502861 \cdot 10^{-6}\,\text{mol}\cdot\text{l}^{-1}$

This species takes part in three reactions (as a reactant in reaction_1 and as a product in reaction_18 and as a modifier in reaction_1).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_1} = v_{18} - v_1 \tag{300}$$

10.2 Species species_2

Name eIF2B

Initial concentration $2.26917415591732 \cdot 10^{-7}\,\text{mol}\cdot\text{l}^{-1}$

This species takes part in four reactions (as a reactant in reaction_1 and as a product in reaction_2 and as a modifier in reaction_1, reaction_2).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_2} = v_2 - v_1 \tag{301}$$

10.3 Species `species_3`

Name eIF2_GDP_eIF2B

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

This species takes part in four reactions (as a reactant in `reaction_2` and as a product in `reaction_1` and as a modifier in `reaction_1`, `reaction_2`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_3} = v_1 - v_2 \tag{302}$$

10.4 Species `species_4`

Name eIF2_GTP

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

This species takes part in four reactions (as a reactant in `reaction_3` and as a product in `reaction_2` and as a modifier in `reaction_2`, `reaction_3`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_4} = v_2 - v_3 \tag{303}$$

10.5 Species `species_5`

Name Met-tRNA

Initial concentration $2.59334189247694\cdot 10^{-5}\,\mathrm{mol\cdot l^{-1}}$

This species takes part in two reactions (as a reactant in `reaction_3` and as a modifier in `reaction_3`), which do not influence its rate of change because this constant species is on the boundary of the reaction system:

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_5} = 0 \tag{304}$$

10.6 Species `species_6`

Name eIF2_GTP_Met-tRNA

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

This species takes part in four reactions (as a reactant in `reaction_5` and as a product in `reaction_3` and as a modifier in `reaction_3`, `reaction_5`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_6} = v_3 - v_5 \tag{305}$$

10.7 Species `species_7`

Name eIF3

Initial concentration $9.31982242608899 \cdot 10^{-7} \, \mathrm{mol} \cdot \mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_4` and as a product in `reaction_18` and as a modifier in `reaction_4`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_7} = v_{18} - v_4 \tag{306}$$

10.8 Species `species_8`

Name eIF5

Initial concentration $8.10419341399042 \cdot 10^{-7} \, \mathrm{mol} \cdot \mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_4` and as a product in `reaction_18` and as a modifier in `reaction_4`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_8} = v_{18} - v_4 \tag{307}$$

10.9 Species `species_9`

Name eIF3_eIF5

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

This species takes part in four reactions (as a reactant in `reaction_5` and as a product in `reaction_4` and as a modifier in `reaction_4`, `reaction_5`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_9} = v_4 - v_5 \tag{308}$$

10.10 Species `species_10`

Name eIF3_eIF5_eIF2_GTP_Met-tRNA

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

This species takes part in four reactions (as a reactant in `reaction_6` and as a product in `reaction_5` and as a modifier in `reaction_5`, `reaction_6`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_10} = v_5 - v_6 \tag{309}$$

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10.11 Species `species_11`

Name eIF1

Initial concentration $1.53979674865818 \cdot 10^{-6}\,\mathrm{mol} \cdot \mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_6` and as a product in `reaction_18` and as a modifier in `reaction_6`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_11} = v_{18} - v_6 \tag{310}$$

10.12 Species `species_12`

Name eIF1_eIF3_eIF5_eIF2_GTP_Met-tRNA

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

This species takes part in four reactions (as a reactant in `reaction_8` and as a product in `reaction_6` and as a modifier in `reaction_6`, `reaction_8`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_12} = v_6 - v_8 \tag{311}$$

10.13 Species `species_13`

Name 40S

Initial concentration $7.69898374329091 \cdot 10^{-6}\,\mathrm{mol} \cdot \mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_7` and as a product in `reaction_141` and as a modifier in `reaction_7`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_13} = v_{141} - v_7 \tag{312}$$

10.14 Species `species_14`

Name eIF1A

Initial concentration $2.30969512298727 \cdot 10^{-6}\,\mathrm{mol} \cdot \mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_7` and as a product in `reaction_18` and as a modifier in `reaction_7`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_14} = v_{18} - v_7 \tag{313}$$

10.15 Species `species_15`

Name 40S_eIF1A

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

This species takes part in three reactions (as a reactant in `reaction_8` and as a product in `reaction_7` and as a modifier in `reaction_8`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_15} = v_7 - v_8 \tag{314}$$

10.16 Species `species_16`

Name 43S

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

This species takes part in three reactions (as a reactant in `reaction_14` and as a product in `reaction_8` and as a modifier in `reaction_14`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_16} = v_8 - v_{14} \tag{315}$$

10.17 Species `species_17`

Name eIF4E

Initial concentration $3.24167736559617\cdot 10^{-6}\,\mathrm{mol}\cdot\mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_9` and as a product in `reaction_18` and as a modifier in `reaction_9`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_17} = v_{18} - v_9 \tag{316}$$

10.18 Species `species_18`

Name eIF4G

Initial concentration $8.91461275538947\cdot 10^{-7}\,\mathrm{mol}\cdot\mathrm{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_9` and as a product in `reaction_18` and as a modifier in `reaction_9`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_18} = v_{18} - v_9 \tag{317}$$

10.19 Species `species_19`

Name eIF4E_eIF4G

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

This species takes part in four reactions (as a reactant in `reaction_11` and as a product in `reaction_9` and as a modifier in `reaction_9`, `reaction_11`).

$$\frac{\text{d}}{\text{d}t}\text{species\_19} = v_9 - v_{11} \tag{318}$$

10.20 Species `species_20`

Name mRNA_cap

Initial concentration $7.16464328895 \cdot 10^{-7} \, \text{mol} \cdot 1^{-1}$

Initial assignment `species_20`

This species takes part in three reactions (as a reactant in `reaction_10` and as a product in `reaction_18` and as a modifier in `reaction_10`).

$$\frac{\text{d}}{\text{d}t}\text{species\_20} = v_{18} - v_{10} \tag{319}$$

10.21 Species `species_21`

Name Pab1

Initial concentration $1.78292255107789 \cdot 10^{-6} \, \text{mol} \cdot 1^{-1}$

This species takes part in three reactions (as a reactant in `reaction_10` and as a product in `reaction_18` and as a modifier in `reaction_10`).

$$\frac{\text{d}}{\text{d}t}\text{species\_21} = v_{18} - v_{10} \tag{320}$$

10.22 Species `species_22`

Name mRNA_Pab1

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

This species takes part in four reactions (as a reactant in `reaction_11` and as a product in `reaction_10` and as a modifier in `reaction_10`, `reaction_11`).

$$\frac{\text{d}}{\text{d}t}\text{species\_22} = v_{10} - v_{11} \tag{321}$$

10.23 Species `species_23`

Name eIF4E_eIF4G_mRNA_Pab1

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

This species takes part in four reactions (as a reactant in `reaction_12` and as a product in `reaction_11` and as a modifier in `reaction_11`, `reaction_12`).

$$\frac{\text{d}}{\text{d}t}\text{species\_23} = v_{11} - v_{12} \tag{322}$$

10.24 Species `species_24`

Name eIF4A

Initial concentration $9.72503209678849 \cdot 10^{-6} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_12` and as a product in `reaction_18` and as a modifier in `reaction_12`).

$$\frac{\text{d}}{\text{d}t}\text{species\_24} = v_{18} - v_{12} \tag{323}$$

10.25 Species `species_25`

Name eIF4B

Initial concentration $1.13458707795866 \cdot 10^{-6} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_13` and as a product in `reaction_18` and as a modifier in `reaction_13`).

$$\frac{\text{d}}{\text{d}t}\text{species\_25} = v_{18} - v_{13} \tag{324}$$

10.26 Species `species_26`

Name eIF4A_eIF4B

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

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

$$\frac{\text{d}}{\text{d}t}\text{species\_26} = 0 \tag{325}$$

10.27 Species `species_27`

Name eIF4E_eIF4G_mRNA_Pab1_eIF4A_eIF4B

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

This species takes part in four reactions (as a reactant in `reaction_14` and as a product in `reaction_13` and as a modifier in `reaction_13`, `reaction_14`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_27} = v_{13} - v_{14} \tag{326}$$

10.28 Species `species_28`

Name 48S

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

This species takes part in three reactions (as a reactant in `reaction_15` and as a product in `reaction_14` and as a modifier in `reaction_15`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_28} = v_{14} - v_{15} \tag{327}$$

10.29 Species `species_29`

Name Ded1

Initial concentration $1.13458707795866 \cdot 10^{-6} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_15` and as a product in `reaction_18` and as a modifier in `reaction_15`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_29} = v_{18} - v_{15} \tag{328}$$

10.30 Species `species_30`

Name 48S_Ded1

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

This species takes part in four reactions (as a reactant in `reaction_17` and as a product in `reaction_15` and as a modifier in `reaction_15`, `reaction_17`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_30} = v_{15} - v_{17} \tag{329}$$

10.31 Species `species_31`

Name eIF5B_GDP

Initial concentration $1.9450064193577 \cdot 10^{-7}\, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_16` and as a product in `reaction_18` and as a modifier in `reaction_16`).

$$\frac{\text{d}}{\text{d}t}\text{species\_31} = v_{18} - v_{16} \tag{330}$$

10.32 Species `species_32`

Name eIF5B_GTP

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

This species takes part in four reactions (as a reactant in `reaction_17` and as a product in `reaction_16` and as a modifier in `reaction_16`, `reaction_17`).

$$\frac{\text{d}}{\text{d}t}\text{species\_32} = v_{16} - v_{17} \tag{331}$$

10.33 Species `species_33`

Name 48S_Ded1_eIF5B_GTP

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

This species takes part in four reactions (as a reactant in `reaction_18` and as a product in `reaction_17` and as a modifier in `reaction_17`, `reaction_18`).

$$\frac{\text{d}}{\text{d}t}\text{species\_33} = v_{17} - v_{18} \tag{332}$$

10.34 Species `species_34`

Name 60S

Initial concentration $7.6989833745501 \cdot 10^{-6}\, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_18` and as a product in `reaction_141` and as a modifier in `reaction_18`).

$$\frac{\text{d}}{\text{d}t}\text{species\_34} = v_{141} - v_{18} \tag{333}$$

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10.35 Species species_35

Name eEF1A_GDP

Initial concentration $4.05209670699521 \cdot 10^{-5}\,\mathrm{mol \cdot l^{-1}}$

This species takes part in 21 reactions (as a reactant in reaction_19 and as a product in reaction_25, reaction_29, reaction_35, reaction_41, reaction_47, reaction_53, reaction_59, reaction_65, reaction_71, reaction_77, reaction_83, reaction_89, reaction_95, reaction_101, reaction_107, reaction_113, reaction_119, reaction_125, reaction_131 and as a modifier in reaction_19).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_35} = v_{25} + v_{29} + v_{35} + v_{41} + v_{47} + v_{53} + v_{59} + v_{65} + v_{71} + v_{77} + v_{83} \\ + v_{89} + v_{95} + v_{101} + v_{107} + v_{113} + v_{119} + v_{125} + v_{131} - v_{19}$$

$$(334)$$

10.36 Species species_36

Name eEF1B

Initial concentration $3.20115639852622 \cdot 10^{-6}\,\mathrm{mol \cdot l^{-1}}$

This species takes part in four reactions (as a reactant in reaction_19 and as a product in reaction_20 and as a modifier in reaction_19, reaction_20).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_36} = v_{20} - v_{19} \tag{335}$$

10.37 Species species_37

Name eEF1A_GDP_eEF1B

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

This species takes part in four reactions (as a reactant in reaction_20 and as a product in reaction_19 and as a modifier in reaction_19, reaction_20).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_37} = v_{19} - v_{20} \tag{336}$$

10.38 Species species_38

Name eEF1A_GTP

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

This species takes part in four reactions (as a reactant in reaction_21 and as a product in reaction_20 and as a modifier in reaction_20, reaction_21).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_38} = v_{20} - v_{21} \tag{337}$$

10.39 Species `species_39`

Name aa-tRNA

Initial concentration $5.18668391964828 \cdot 10^{-4} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in two reactions (as a reactant in `reaction_21` and as a modifier in `reaction_21`), which do not influence its rate of change because this constant species is on the boundary of the reaction system:

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_39} = 0 \tag{338}$$

10.40 Species `species_40`

Name aa-tRNA_eEF1A_GTP

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

This species takes part in 40 reactions (as a reactant in `reaction_24`, `reaction_28`, `reaction_34`, `reaction_40`, `reaction_46`, `reaction_52`, `reaction_58`, `reaction_64`, `reaction_70`, `reaction_76`, `reaction_82`, `reaction_88`, `reaction_94`, `reaction_100`, `reaction_106`, `reaction_112`, `reaction_118`, `reaction_124`, `reaction_130` and as a product in `reaction_21` and as a modifier in `reaction_21`, `reaction_24`, `reaction_28`, `reaction_34`, `reaction_40`, `reaction_46`, `reaction_52`, `reaction_58`, `reaction_64`, `reaction_70`, `reaction_76`, `reaction_82`, `reaction_88`, `reaction_94`, `reaction_100`, `reaction_106`, `reaction_112`, `reaction_118`, `reaction_124`, `reaction_130`).

$$\begin{aligned}\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_40} = {} & v_{21} - v_{24} - v_{28} - v_{34} - v_{40} - v_{46} - v_{52} - v_{58} - v_{64} - v_{70} - v_{76} \\ & - v_{82} - v_{88} - v_{94} - v_{100} - v_{106} - v_{112} - v_{118} - v_{124} - v_{130}\end{aligned} \tag{339}$$

10.41 Species `species_41`

Name eEF2_GDP

Initial concentration $5.6729353897933 \cdot 10^{-6} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in 21 reactions (as a reactant in `reaction_22` and as a product in `reaction_27`, `reaction_31`, `reaction_37`, `reaction_43`, `reaction_49`, `reaction_55`, `reaction_61`, `reaction_67`, `reaction_73`, `reaction_79`, `reaction_85`, `reaction_91`, `reaction_97`, `reaction_103`, `reaction_109`, `reaction_115`, `reaction_121`, `reaction_127`, `reaction_133` and as a modifier in `reaction_22`).

$$\begin{aligned}\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_41} = {} & v_{27} + v_{31} + v_{37} + v_{43} + v_{49} + v_{55} + v_{61} + v_{67} + v_{73} + v_{79} + v_{85} \\ & + v_{91} + v_{97} + v_{103} + v_{109} + v_{115} + v_{121} + v_{127} + v_{133} - v_{22}\end{aligned} \tag{340}$$

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10.42 Species `species_42`

Name eEF2_GTP

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

This species takes part in 40 reactions (as a reactant in `reaction_26`, `reaction_30`, `reaction-_36`, `reaction_42`, `reaction_48`, `reaction_54`, `reaction_60`, `reaction_66`, `reaction-_72`, `reaction_78`, `reaction_84`, `reaction_90`, `reaction_96`, `reaction_102`, `reaction-_108`, `reaction_114`, `reaction_120`, `reaction_126`, `reaction_132` and as a product in `reaction_22` and as a modifier in `reaction_22`, `reaction_26`, `reaction_30`, `reaction-_36`, `reaction_42`, `reaction_48`, `reaction_54`, `reaction_60`, `reaction_66`, `reaction_72`, `reaction_78`, `reaction_84`, `reaction_90`, `reaction_96`, `reaction_102`, `reaction_108`, `reaction_114`, `reaction_120`, `reaction_126`, `reaction_132`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_42} = v_{22} - v_{26} - v_{30} - v_{36} - v_{42} - v_{48} - v_{54} - v_{60} - v_{66} - v_{72} - v_{78}$$
$$- v_{84} - v_{90} - v_{96} - v_{102} - v_{108} - v_{114} - v_{120} - v_{126} - v_{132}$$

$$(341)$$

10.43 Species `species_43`

Name eEF3_GDP

Initial concentration $4.45730637769471 \cdot 10^{-6} \, \text{mol} \cdot l^{-1}$

This species takes part in 21 reactions (as a reactant in `reaction_23` and as a product in `reaction_33`, `reaction_39`, `reaction_45`, `reaction_51`, `reaction_57`, `reaction_63`, `reaction-_69`, `reaction_75`, `reaction_81`, `reaction_87`, `reaction_93`, `reaction_99`, `reaction-_105`, `reaction_111`, `reaction_117`, `reaction_123`, `reaction_129`, `reaction_135`, `reaction-_137` and as a modifier in `reaction_23`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_43} = v_{33} + v_{39} + v_{45} + v_{51} + v_{57} + v_{63} + v_{69} + v_{75} + v_{81} + v_{87} + v_{93}$$
$$+ v_{99} + v_{105} + v_{111} + v_{117} + v_{123} + v_{129} + v_{135} + v_{137} - v_{23}$$

$$(342)$$

10.44 Species `species_44`

Name eEF3_GTP

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

This species takes part in 40 reactions (as a reactant in `reaction_32`, `reaction_38`, `reaction-_44`, `reaction_50`, `reaction_56`, `reaction_62`, `reaction_68`, `reaction_74`, `reaction-_80`, `reaction_86`, `reaction_92`, `reaction_98`, `reaction_104`, `reaction_110`, `reaction-_116`, `reaction_122`, `reaction_128`, `reaction_134`, `reaction_136` and as a product in

reaction_23 and as a modifier in reaction_23, reaction_32, reaction_38, reaction-_44, reaction_50, reaction_56, reaction_62, reaction_68, reaction_74, reaction_80, reaction_86, reaction_92, reaction_98, reaction_104, reaction_110, reaction_116, reaction_122, reaction_128, reaction_134, reaction_136).

$$\frac{d}{dt}\text{species\_44} = v_{23} - v_{32} - v_{38} - v_{44} - v_{50} - v_{56} - v_{62} - v_{68} - v_{74} - v_{80} - v_{86}$$
$$- v_{92} - v_{98} - v_{104} - v_{110} - v_{116} - v_{122} - v_{128} - v_{134} - v_{136}$$
(343)

10.45 Species species_45

Name tRNA

Initial concentration $2.59333683546025 \cdot 10^{-4}\,\text{mol}\cdot\text{l}^{-1}$

This species takes part in 19 reactions (as a product in reaction_33, reaction_39, reaction-_45, reaction_51, reaction_57, reaction_63, reaction_69, reaction_75, reaction_81, reaction_87, reaction_93, reaction_99, reaction_105, reaction_111, reaction_117, reaction_123, reaction_129, reaction_135, reaction_137), which do not influence its rate of change because this constant species is on the boundary of the reaction system:

$$\frac{d}{dt}\text{species\_45} = 0$$
(344)

10.46 Species species_46

Name 80S_1

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

This species takes part in five reactions (as a reactant in reaction_24 and as a product in reaction_18 and as a modifier in reaction_18, reaction_18, reaction_24).

$$\frac{d}{dt}\text{species\_46} = v_{18} - v_{24}$$
(345)

10.47 Species species_47

Name 80S_aa-tRNA_eEF1A_GTP_1

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

This species takes part in six reactions (as a reactant in reaction_25 and as a product in reaction_24 and as a modifier in reaction_18, reaction_18, reaction_24, reaction-_25).

$$\frac{d}{dt}\text{species\_47} = v_{24} - v_{25}$$
(346)

10.48 Species `species_48`

Name 80S_aa-tRNA_1

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

This species takes part in five reactions (as a reactant in `reaction_26` and as a product in `reaction_25` and as a modifier in `reaction_18`, `reaction_18`, `reaction_26`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_48} = v_{25} - v_{26} \tag{347}$$

10.49 Species `species_49`

Name 80S_aa-tRNA_eEF2_GTP_1

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

This species takes part in six reactions (as a reactant in `reaction_27` and as a product in `reaction_26` and as a modifier in `reaction_18`, `reaction_18`, `reaction_26`, `reaction-_27`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_49} = v_{26} - v_{27} \tag{348}$$

10.50 Species `species_50`

Name 80S_2

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

This species takes part in seven reactions (as a reactant in `reaction_28` and as a product in `reaction_33` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_28`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_50} = v_{33} - v_{28} \tag{349}$$

10.51 Species `species_51`

Name 80S_aa-tRNA_eEF1A_GTP_2

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

This species takes part in eight reactions (as a reactant in `reaction_29` and as a product in `reaction_28` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_28`, `reaction_29`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_51} = v_{28} - v_{29} \tag{350}$$

10.52 Species `species_52`

Name 80S_aa-tRNA_2

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

This species takes part in seven reactions (as a reactant in `reaction_30` and as a product in `reaction_29` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_30`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_52} = v_{29} - v_{30} \tag{351}$$

10.53 Species `species_53`

Name 80S_aa-tRNA_eEF2_GTP_2

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

This species takes part in eight reactions (as a reactant in `reaction_31` and as a product in `reaction_30` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_30`, `reaction_31`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_53} = v_{30} - v_{31} \tag{352}$$

10.54 Species `species_54`

Name 80S_tRNA_2

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

This species takes part in seven reactions (as a reactant in `reaction_32` and as a product in `reaction_27` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_32`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_54} = v_{27} - v_{32} \tag{353}$$

10.55 Species `species_55`

Name 80S_tRNA_eEF3_GTP_2

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

This species takes part in seven reactions (as a reactant in `reaction_33` and as a product in `reaction_32` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_33`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_55} = v_{32} - v_{33} \tag{354}$$

10.56 Species species_56

Name 80S_3

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

This species takes part in nine reactions (as a reactant in reaction_34 and as a product in reaction_39 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_34).

$$\frac{d}{dt}\text{species\_56} = v_{39} - v_{34} \tag{355}$$

10.57 Species species_57

Name 80S_aa-tRNA_eEF1A_GTP_3

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

This species takes part in ten reactions (as a reactant in reaction_35 and as a product in reaction_34 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_34, reaction_35).

$$\frac{d}{dt}\text{species\_57} = v_{34} - v_{35} \tag{356}$$

10.58 Species species_58

Name 80S_aa-tRNA_3

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

This species takes part in nine reactions (as a reactant in reaction_36 and as a product in reaction_35 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_36).

$$\frac{d}{dt}\text{species\_58} = v_{35} - v_{36} \tag{357}$$

10.59 Species species_59

Name 80S_aa-tRNA_eEF2_GTP_3

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

This species takes part in ten reactions (as a reactant in reaction_37 and as a product in reaction_36 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_36, reaction_37).

$$\frac{d}{dt}\text{species\_59} = v_{36} - v_{37} \tag{358}$$

10.60 Species `species_60`

Name 80S_tRNA_3

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

This species takes part in nine reactions (as a reactant in `reaction_38` and as a product in `reaction_31` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_38`).

$$\frac{d}{dt}\text{species\_60} = v_{31} - v_{38} \tag{359}$$

10.61 Species `species_61`

Name 80S_tRNA_eEF3_GTP_3

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

This species takes part in nine reactions (as a reactant in `reaction_39` and as a product in `reaction_38` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_39`).

$$\frac{d}{dt}\text{species\_61} = v_{38} - v_{39} \tag{360}$$

10.62 Species `species_62`

Name 80S_4

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

This species takes part in eleven reactions (as a reactant in `reaction_40` and as a product in `reaction_45` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_40`).

$$\frac{d}{dt}\text{species\_62} = v_{45} - v_{40} \tag{361}$$

10.63 Species `species_63`

Name 80S_aa-tRNA_eEF1A_GTP_4

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

This species takes part in twelve reactions (as a reactant in `reaction_41` and as a product in `reaction_40` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_40`, `reaction_41`).

$$\frac{d}{dt}\text{species\_63} = v_{40} - v_{41} \tag{362}$$

10.64 Species species_64

Name 80S_aa-tRNA_4

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

This species takes part in eleven reactions (as a reactant in reaction_42 and as a product in reaction_41 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_42).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_64} = v_{41} - v_{42} \tag{363}$$

10.65 Species species_65

Name 80S_aa-tRNA_eEF2_GTP_4

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

This species takes part in twelve reactions (as a reactant in reaction_43 and as a product in reaction_42 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_42, reaction_43).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_65} = v_{42} - v_{43} \tag{364}$$

10.66 Species species_66

Name 80S_tRNA_4

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

This species takes part in eleven reactions (as a reactant in reaction_44 and as a product in reaction_37 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_44).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_66} = v_{37} - v_{44} \tag{365}$$

10.67 Species species_67

Name 80S_tRNA_eEF3_GTP_4

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

This species takes part in eleven reactions (as a reactant in reaction_45 and as a product in reaction_44 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_45).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_67} = v_{44} - v_{45} \tag{366}$$

10.68 Species species_68

Name 80S_5

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

This species takes part in 13 reactions (as a reactant in reaction_46 and as a product in reaction_51 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_46).

$$\frac{\text{d}}{\text{d}t}\text{species\_68} = v_{51} - v_{46} \tag{367}$$

10.69 Species species_69

Name 80S_aa-tRNA_eEF1A_GTP_5

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

This species takes part in 14 reactions (as a reactant in reaction_47 and as a product in reaction_46 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_46, reaction_47).

$$\frac{\text{d}}{\text{d}t}\text{species\_69} = v_{46} - v_{47} \tag{368}$$

10.70 Species species_70

Name 80S_aa-tRNA_5

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

This species takes part in 13 reactions (as a reactant in reaction_48 and as a product in reaction_47 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_48).

$$\frac{\text{d}}{\text{d}t}\text{species\_70} = v_{47} - v_{48} \tag{369}$$

10.71 Species species_71

Name 80S_aa-tRNA_eEF2_GTP_5

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

This species takes part in 14 reactions (as a reactant in `reaction_49` and as a product in `reaction_48` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_48`, `reaction_49`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_71} = v_{48} - v_{49} \tag{370}$$

10.72 Species `species_72`

Name 80S_tRNA_5

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

This species takes part in 13 reactions (as a reactant in `reaction_50` and as a product in `reaction_43` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_50`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_72} = v_{43} - v_{50} \tag{371}$$

10.73 Species `species_73`

Name 80S_tRNA_eEF3_GTP_5

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

This species takes part in 13 reactions (as a reactant in `reaction_51` and as a product in `reaction_50` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_51`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_73} = v_{50} - v_{51} \tag{372}$$

10.74 Species `species_74`

Name 80S_6

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

This species takes part in 15 reactions (as a reactant in `reaction_52` and as a product in `reaction_57` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_52`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_74} = v_{57} - v_{52} \tag{373}$$

10.75 Species species_75

Name 80S_aa-tRNA_eEF1A_GTP_6

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

This species takes part in 16 reactions (as a reactant in `reaction_53` and as a product in `reaction_52` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_52`, `reaction_53`).

$$\frac{\text{d}}{\text{d}t}\text{species\_75} = v_{52} - v_{53} \tag{374}$$

10.76 Species species_76

Name 80S_aa-tRNA_6

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

This species takes part in 15 reactions (as a reactant in `reaction_54` and as a product in `reaction_53` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_54`).

$$\frac{\text{d}}{\text{d}t}\text{species\_76} = v_{53} - v_{54} \tag{375}$$

10.77 Species species_77

Name 80S_aa-tRNA_eEF2_GTP_6

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

This species takes part in 16 reactions (as a reactant in `reaction_55` and as a product in `reaction_54` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_54`, `reaction_55`).

$$\frac{\text{d}}{\text{d}t}\text{species\_77} = v_{54} - v_{55} \tag{376}$$

10.78 Species species_78

Name 80S_tRNA_6

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

This species takes part in 15 reactions (as a reactant in `reaction_56` and as a product in `reaction_49` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_56`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_78} = v_{49} - v_{56} \qquad (377)$$

10.79 Species `species_79`

Name 80S_tRNA_eEF3_GTP_6

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

This species takes part in 15 reactions (as a reactant in `reaction_57` and as a product in `reaction_56` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_57`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_79} = v_{56} - v_{57} \qquad (378)$$

10.80 Species `species_80`

Name 80S_7

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

This species takes part in 15 reactions (as a reactant in `reaction_58` and as a product in `reaction_63` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_58`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_80} = v_{63} - v_{58} \qquad (379)$$

10.81 Species `species_81`

Name 80S_aa-tRNA_eEF1A_GTP_7

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

This species takes part in 16 reactions (as a reactant in `reaction_59` and as a product in `reaction_58` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_58`, `reaction_59`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_81} = v_{58} - v_{59} \qquad (380)$$

10.82 Species `species_82`

Name 80S_aa-tRNA_7

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

This species takes part in 15 reactions (as a reactant in `reaction_60` and as a product in `reaction_59` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_60`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_82} = v_{59} - v_{60} \tag{381}$$

10.83 Species `species_83`

Name 80S_aa-tRNA_eEF2_GTP_7

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

This species takes part in 16 reactions (as a reactant in `reaction_61` and as a product in `reaction_60` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_60`, `reaction_61`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_83} = v_{60} - v_{61} \tag{382}$$

10.84 Species `species_84`

Name 80S_tRNA_7

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

This species takes part in 15 reactions (as a reactant in `reaction_62` and as a product in `reaction_55` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_62`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_84} = v_{55} - v_{62} \tag{383}$$

10.85 Species `species_85`

Name 80S_tRNA_eEF3_GTP_7

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

This species takes part in 15 reactions (as a reactant in `reaction_63` and as a product in `reaction_62` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_63`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_85} = v_{62} - v_{63} \tag{384}$$

10.86 Species `species_86`

Name 80S_8

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

This species takes part in 15 reactions (as a reactant in `reaction_64` and as a product in `reaction_69` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_64`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_86} = v_{69} - v_{64} \tag{385}$$

10.87 Species `species_87`

Name 80S_aa-tRNA_eEF1A_GTP_8

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

This species takes part in 16 reactions (as a reactant in `reaction_65` and as a product in `reaction_64` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_64`, `reaction_65`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_87} = v_{64} - v_{65} \tag{386}$$

10.88 Species `species_88`

Name 80S_aa-tRNA_8

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

This species takes part in 15 reactions (as a reactant in `reaction_66` and as a product in `reaction_65` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_66`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_88} = v_{65} - v_{66} \tag{387}$$

10.89 Species `species_89`

Name 80S_aa-tRNA_eEF2_GTP_8

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

This species takes part in 16 reactions (as a reactant in `reaction_67` and as a product in `reaction_66` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_66`, `reaction_67`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_89} = v_{66} - v_{67} \tag{388}$$

10.90 Species `species_90`

Name 80S_tRNA_8

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

This species takes part in 15 reactions (as a reactant in `reaction_68` and as a product in `reaction_61` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_68`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_90} = v_{61} - v_{68} \tag{389}$$

10.91 Species `species_91`

Name 80S_tRNA_eEF3_GTP_8

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

This species takes part in 15 reactions (as a reactant in `reaction_69` and as a product in `reaction_68` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_69`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\mathrm{species\_91} = v_{68} - v_{69} \tag{390}$$

10.92 Species `species_92`

Name 80S_9

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

This species takes part in 15 reactions (as a reactant in `reaction_70` and as a product in `reaction_75` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_70`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_92} = v_{75} - v_{70} \tag{391}$$

10.93 Species `species_93`

Name 80S_aa-tRNA_eEF1A_GTP_9

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

This species takes part in 16 reactions (as a reactant in `reaction_71` and as a product in `reaction_70` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_70`, `reaction_71`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_93} = v_{70} - v_{71} \tag{392}$$

10.94 Species `species_94`

Name 80S_aa-tRNA_9

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

This species takes part in 15 reactions (as a reactant in `reaction_72` and as a product in `reaction_71` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_72`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_94} = v_{71} - v_{72} \tag{393}$$

10.95 Species `species_95`

Name 80S_aa-tRNA_eEF2_GTP_9

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

This species takes part in 16 reactions (as a reactant in `reaction_73` and as a product in `reaction_72` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_72`, `reaction_73`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_95} = v_{72} - v_{73} \tag{394}$$

10.96 Species species_96

Name 80S_tRNA_9

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

This species takes part in 15 reactions (as a reactant in reaction_74 and as a product in reaction_67 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_74).

$$\frac{\text{d}}{\text{d}t}\text{species\_96} = v_{67} - v_{74} \tag{395}$$

10.97 Species species_97

Name 80S_tRNA_eEF3_GTP_9

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

This species takes part in 15 reactions (as a reactant in reaction_75 and as a product in reaction_74 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_75).

$$\frac{\text{d}}{\text{d}t}\text{species\_97} = v_{74} - v_{75} \tag{396}$$

10.98 Species species_98

Name 80S_10

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

This species takes part in 15 reactions (as a reactant in reaction_76 and as a product in reaction_81 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_76).

$$\frac{\text{d}}{\text{d}t}\text{species\_98} = v_{81} - v_{76} \tag{397}$$

10.99 Species species_99

Name 80S_aa-tRNA_eEF1A_GTP_10

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

This species takes part in 16 reactions (as a reactant in reaction_77 and as a product in reaction_76 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_76, reaction_77).

$$\frac{d}{dt}\text{species\_99} = v_{76} - v_{77} \tag{398}$$

10.100 Species species_100

Name 80S_aa-tRNA_10

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

This species takes part in 15 reactions (as a reactant in reaction_78 and as a product in reaction_77 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_78).

$$\frac{d}{dt}\text{species\_100} = v_{77} - v_{78} \tag{399}$$

10.101 Species species_101

Name 80S_aa-tRNA_eEF2_GTP_10

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

This species takes part in 16 reactions (as a reactant in reaction_79 and as a product in reaction_78 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_78, reaction_79).

$$\frac{d}{dt}\text{species\_101} = v_{78} - v_{79} \tag{400}$$

10.102 Species species_102

Name 80S_tRNA_10

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

This species takes part in 15 reactions (as a reactant in reaction_80 and as a product in reaction_73 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_80).

$$\frac{d}{dt}\text{species\_102} = v_{73} - v_{80} \tag{401}$$

10.103 Species `species_103`

Name 80S_tRNA_eEF3_GTP_10

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

This species takes part in 15 reactions (as a reactant in `reaction_81` and as a product in `reaction_80` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_81`).

$$\frac{\text{d}}{\text{d}t}\text{species\_103} = v_{80} - v_{81} \tag{402}$$

10.104 Species `species_104`

Name 80S_11

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

This species takes part in 15 reactions (as a reactant in `reaction_82` and as a product in `reaction_87` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_82`).

$$\frac{\text{d}}{\text{d}t}\text{species\_104} = v_{87} - v_{82} \tag{403}$$

10.105 Species `species_105`

Name 80S_aa-tRNA_eEF1A_GTP_11

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

This species takes part in 16 reactions (as a reactant in `reaction_83` and as a product in `reaction_82` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_82`, `reaction_83`).

$$\frac{\text{d}}{\text{d}t}\text{species\_105} = v_{82} - v_{83} \tag{404}$$

10.106 Species `species_106`

Name 80S_aa-tRNA_11

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

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This species takes part in 15 reactions (as a reactant in reaction_84 and as a product in reaction_83 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_84).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_106} = v_{83} - v_{84} \tag{405}$$

10.107 Species species_107

Name 80S_aa-tRNA_eEF2_GTP_11

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

This species takes part in 16 reactions (as a reactant in reaction_85 and as a product in reaction_84 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_84, reaction_85).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_107} = v_{84} - v_{85} \tag{406}$$

10.108 Species species_108

Name 80S_tRNA_11

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

This species takes part in 15 reactions (as a reactant in reaction_86 and as a product in reaction_79 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_86).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_108} = v_{79} - v_{86} \tag{407}$$

10.109 Species species_109

Name 80S_tRNA_eEF3_GTP_11

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

This species takes part in 15 reactions (as a reactant in reaction_87 and as a product in reaction_86 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_87).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_109} = v_{86} - v_{87} \tag{408}$$

10.110 Species species_110

Name 80S_12

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

This species takes part in 15 reactions (as a reactant in reaction_88 and as a product in reaction_93 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_88).

$$\frac{d}{dt}\text{species\_110} = v_{93} - v_{88} \tag{409}$$

10.111 Species species_111

Name 80S_aa-tRNA_eEF1A_GTP_12

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

This species takes part in 16 reactions (as a reactant in reaction_89 and as a product in reaction_88 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_88, reaction_89).

$$\frac{d}{dt}\text{species\_111} = v_{88} - v_{89} \tag{410}$$

10.112 Species species_112

Name 80S_aa-tRNA_12

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

This species takes part in 15 reactions (as a reactant in reaction_90 and as a product in reaction_89 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_90).

$$\frac{d}{dt}\text{species\_112} = v_{89} - v_{90} \tag{411}$$

10.113 Species species_113

Name 80S_aa-tRNA_eEF2_GTP_12

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

This species takes part in 16 reactions (as a reactant in reaction_91 and as a product in reaction_90 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_90, reaction_91).

$$\frac{d}{dt}\text{species\_113} = v_{90} - v_{91} \tag{412}$$

10.114 Species species_114

Name 80S_tRNA_12

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

This species takes part in 15 reactions (as a reactant in reaction_92 and as a product in reaction_85 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_92).

$$\frac{d}{dt}\text{species\_114} = v_{85} - v_{92} \tag{413}$$

10.115 Species species_115

Name 80S_tRNA_eEF3_GTP_12

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

This species takes part in 15 reactions (as a reactant in reaction_93 and as a product in reaction_92 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_93).

$$\frac{d}{dt}\text{species\_115} = v_{92} - v_{93} \tag{414}$$

10.116 Species species_116

Name 80S_13

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

This species takes part in 15 reactions (as a reactant in reaction_94 and as a product in reaction_99 and as a modifier in reaction_18, reaction_18, reaction_27, reaction-_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_94).

$$\frac{d}{dt}\text{species\_116} = v_{99} - v_{94} \tag{415}$$

10.117 Species `species_117`

Name 80S_aa-tRNA_eEF1A_GTP_13

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

This species takes part in 16 reactions (as a reactant in `reaction_95` and as a product in `reaction_94` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_94`, `reaction_95`).

$$\frac{\text{d}}{\text{d}t}\text{species\_117} = v_{94} - v_{95} \tag{416}$$

10.118 Species `species_118`

Name 80S_aa-tRNA_13

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

This species takes part in 15 reactions (as a reactant in `reaction_96` and as a product in `reaction_95` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_96`).

$$\frac{\text{d}}{\text{d}t}\text{species\_118} = v_{95} - v_{96} \tag{417}$$

10.119 Species `species_119`

Name 80S_aa-tRNA_eEF2_GTP_13

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

This species takes part in 16 reactions (as a reactant in `reaction_97` and as a product in `reaction_96` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_96`, `reaction_97`).

$$\frac{\text{d}}{\text{d}t}\text{species\_119} = v_{96} - v_{97} \tag{418}$$

10.120 Species `species_120`

Name 80S_tRNA_13

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

This species takes part in 15 reactions (as a reactant in `reaction_98` and as a product in `reaction_91` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_98`).

$$\frac{d}{dt}\text{species\_120} = v_{91} - v_{98} \tag{419}$$

10.121 Species `species_121`

Name 80S_tRNA_eEF3_GTP_13

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

This species takes part in 15 reactions (as a reactant in `reaction_99` and as a product in `reaction_98` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_99`).

$$\frac{d}{dt}\text{species\_121} = v_{98} - v_{99} \tag{420}$$

10.122 Species `species_122`

Name 80S_14

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

This species takes part in 15 reactions (as a reactant in `reaction_100` and as a product in `reaction_105` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_100`).

$$\frac{d}{dt}\text{species\_122} = v_{105} - v_{100} \tag{421}$$

10.123 Species `species_123`

Name 80S_aa-tRNA_eEF1A_GTP_14

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

This species takes part in 16 reactions (as a reactant in `reaction_101` and as a product in `reaction_100` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_100`, `reaction_101`).

$$\frac{d}{dt}\text{species\_123} = v_{100} - v_{101} \tag{422}$$

10.124 Species `species_124`

Name 80S_aa-tRNA_14

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

This species takes part in 15 reactions (as a reactant in `reaction_102` and as a product in `reaction_101` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_102`).

$$\frac{\text{d}}{\text{d}t}\text{species\_124} = v_{101} - v_{102} \tag{423}$$

10.125 Species `species_125`

Name 80S_aa-tRNA_eEF2_GTP_14

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

This species takes part in 16 reactions (as a reactant in `reaction_103` and as a product in `reaction_102` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_102`, `reaction_103`).

$$\frac{\text{d}}{\text{d}t}\text{species\_125} = v_{102} - v_{103} \tag{424}$$

10.126 Species `species_126`

Name 80S_tRNA_14

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

This species takes part in 15 reactions (as a reactant in `reaction_104` and as a product in `reaction_97` and as a modifier in `reaction_18`, `reaction_18`, `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_104`).

$$\frac{\text{d}}{\text{d}t}\text{species\_126} = v_{97} - v_{104} \tag{425}$$

10.127 Species `species_127`

Name 80S_tRNA_eEF3_GTP_14

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

This species takes part in 15 reactions (as a reactant in reaction_105 and as a product in reaction_104 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_105).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_127} = v_{104} - v_{105} \tag{426}$$

10.128 Species species_128

Name 80S_15

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

This species takes part in 15 reactions (as a reactant in reaction_106 and as a product in reaction_111 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_106).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_128} = v_{111} - v_{106} \tag{427}$$

10.129 Species species_129

Name 80S_aa-tRNA_eEF1A_GTP_15

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

This species takes part in 16 reactions (as a reactant in reaction_107 and as a product in reaction_106 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_106, reaction_107).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_129} = v_{106} - v_{107} \tag{428}$$

10.130 Species species_130

Name 80S_aa-tRNA_15

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

This species takes part in 15 reactions (as a reactant in reaction_108 and as a product in reaction_107 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_108).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_130} = v_{107} - v_{108} \tag{429}$$

10.131 Species species_131

Name 80S_aa-tRNA_eEF2_GTP_15

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

This species takes part in 16 reactions (as a reactant in reaction_109 and as a product in reaction_108 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_108, reaction_109).

$$\frac{\text{d}}{\text{d}t}\text{species\_131} = v_{108} - v_{109} \tag{430}$$

10.132 Species species_132

Name 80S_tRNA_15

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

This species takes part in 15 reactions (as a reactant in reaction_110 and as a product in reaction_103 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_110).

$$\frac{\text{d}}{\text{d}t}\text{species\_132} = v_{103} - v_{110} \tag{431}$$

10.133 Species species_133

Name 80S_tRNA_eEF3_GTP_15

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

This species takes part in 15 reactions (as a reactant in reaction_111 and as a product in reaction_110 and as a modifier in reaction_18, reaction_18, reaction_27, reaction_27, reaction_31, reaction_31, reaction_37, reaction_37, reaction_43, reaction_43, reaction_49, reaction_49, reaction_111).

$$\frac{\text{d}}{\text{d}t}\text{species\_133} = v_{110} - v_{111} \tag{432}$$

10.134 Species species_134

Name 80S_16

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

This species takes part in 13 reactions (as a reactant in `reaction_112` and as a product in `reaction_117` and as a modifier in `reaction_27`, `reaction_27`, `reaction_31`, `reaction-_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_112`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_134} = v_{117} - v_{112} \tag{433}$$

10.135 Species `species_135`

Name 80S_aa-tRNA_eEF1A_GTP_16

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

This species takes part in 14 reactions (as a reactant in `reaction_113` and as a product in `reaction_112` and as a modifier in `reaction_27`, `reaction_27`, `reaction_31`, `reaction-_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_112`, `reaction_113`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_135} = v_{112} - v_{113} \tag{434}$$

10.136 Species `species_136`

Name 80S_aa-tRNA_16

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

This species takes part in 13 reactions (as a reactant in `reaction_114` and as a product in `reaction_113` and as a modifier in `reaction_27`, `reaction_27`, `reaction_31`, `reaction-_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_114`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_136} = v_{113} - v_{114} \tag{435}$$

10.137 Species `species_137`

Name 80S_aa-tRNA_eEF2_GTP_16

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

This species takes part in 14 reactions (as a reactant in `reaction_115` and as a product in `reaction_114` and as a modifier in `reaction_27`, `reaction_27`, `reaction_31`, `reaction-_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_114`, `reaction_115`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_137} = v_{114} - v_{115} \tag{436}$$

10.138 Species `species_138`

Name 80S_tRNA_16

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

This species takes part in 13 reactions (as a reactant in `reaction_116` and as a product in `reaction_109` and as a modifier in `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_116`).

$$\frac{\text{d}}{\text{d}t}\text{species\_138} = v_{109} - v_{116} \tag{437}$$

10.139 Species `species_139`

Name 80S_tRNA_eEF3_GTP_16

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

This species takes part in 13 reactions (as a reactant in `reaction_117` and as a product in `reaction_116` and as a modifier in `reaction_27`, `reaction_27`, `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_117`).

$$\frac{\text{d}}{\text{d}t}\text{species\_139} = v_{116} - v_{117} \tag{438}$$

10.140 Species `species_140`

Name 80S_17

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

This species takes part in eleven reactions (as a reactant in `reaction_118` and as a product in `reaction_123` and as a modifier in `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_118`).

$$\frac{\text{d}}{\text{d}t}\text{species\_140} = v_{123} - v_{118} \tag{439}$$

10.141 Species `species_141`

Name 80S_aa-tRNA_eEF1A_GTP_17

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

This species takes part in twelve reactions (as a reactant in `reaction_119` and as a product in `reaction_118` and as a modifier in `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_118`, `reaction_119`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_141} = v_{118} - v_{119} \tag{440}$$

10.142 Species `species_142`

Name 80S_aa-tRNA_17

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

This species takes part in eleven reactions (as a reactant in `reaction_120` and as a product in `reaction_119` and as a modifier in `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_120`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_142} = v_{119} - v_{120} \tag{441}$$

10.143 Species `species_143`

Name 80S_aa-tRNA_eEF2_GTP_17

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

This species takes part in twelve reactions (as a reactant in `reaction_121` and as a product in `reaction_120` and as a modifier in `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_120`, `reaction_121`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_143} = v_{120} - v_{121} \tag{442}$$

10.144 Species `species_144`

Name 80S_tRNA_17

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

This species takes part in eleven reactions (as a reactant in `reaction_122` and as a product in `reaction_115` and as a modifier in `reaction_31`, `reaction_31`, `reaction_37`, `reaction_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_122`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_144} = v_{115} - v_{122} \tag{443}$$

10.145 Species `species_145`

Name 80S_tRNA_eEF3_GTP_17

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

This species takes part in eleven reactions (as a reactant in `reaction_123` and as a product in `reaction_122` and as a modifier in `reaction_31`, `reaction_31`, `reaction_37`, `reaction-_37`, `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_123`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_145} = v_{122} - v_{123} \tag{444}$$

10.146 Species `species_146`

Name 80S_18

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

This species takes part in nine reactions (as a reactant in `reaction_124` and as a product in `reaction_129` and as a modifier in `reaction_37`, `reaction_37`, `reaction_43`, `reaction-_43`, `reaction_49`, `reaction_49`, `reaction_124`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_146} = v_{129} - v_{124} \tag{445}$$

10.147 Species `species_147`

Name 80S_aa-tRNA_eEF1A_GTP_18

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

This species takes part in ten reactions (as a reactant in `reaction_125` and as a product in `reaction_124` and as a modifier in `reaction_37`, `reaction_37`, `reaction_43`, `reaction-_43`, `reaction_49`, `reaction_49`, `reaction_124`, `reaction_125`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_147} = v_{124} - v_{125} \tag{446}$$

10.148 Species `species_148`

Name 80S_aa-tRNA_18

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

This species takes part in nine reactions (as a reactant in `reaction_126` and as a product in `reaction_125` and as a modifier in `reaction_37`, `reaction_37`, `reaction_43`, `reaction-_43`, `reaction_49`, `reaction_49`, `reaction_126`).

$$\frac{\mathrm{d}}{\mathrm{d}t}\text{species\_148} = v_{125} - v_{126} \tag{447}$$

10.149 Species `species_149`

Name 80S_aa-tRNA_eEF2_GTP_18

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

This species takes part in ten reactions (as a reactant in `reaction_127` and as a product in `reaction_126` and as a modifier in `reaction_37`, `reaction_37`, `reaction_43`, `reaction-_43`, `reaction_49`, `reaction_49`, `reaction_126`, `reaction_127`).

$$\frac{\text{d}}{\text{d}t}\text{species\_149} = v_{126} - v_{127} \tag{448}$$

10.150 Species `species_150`

Name 80S_tRNA_18

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

This species takes part in nine reactions (as a reactant in `reaction_128` and as a product in `reaction_121` and as a modifier in `reaction_37`, `reaction_37`, `reaction_43`, `reaction-_43`, `reaction_49`, `reaction_49`, `reaction_128`).

$$\frac{\text{d}}{\text{d}t}\text{species\_150} = v_{121} - v_{128} \tag{449}$$

10.151 Species `species_151`

Name 80S_tRNA_eEF3_GTP_18

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

This species takes part in nine reactions (as a reactant in `reaction_129` and as a product in `reaction_128` and as a modifier in `reaction_37`, `reaction_37`, `reaction_43`, `reaction-_43`, `reaction_49`, `reaction_49`, `reaction_129`).

$$\frac{\text{d}}{\text{d}t}\text{species\_151} = v_{128} - v_{129} \tag{450}$$

10.152 Species `species_152`

Name 80S_19

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

This species takes part in seven reactions (as a reactant in `reaction_130` and as a product in `reaction_135` and as a modifier in `reaction_43`, `reaction_43`, `reaction_49`, `reaction-_49`, `reaction_130`).

$$\frac{\text{d}}{\text{d}t}\text{species\_152} = v_{135} - v_{130} \tag{451}$$

10.153 Species `species_153`

Name 80S_aa-tRNA_eEF1A_GTP_19

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

This species takes part in eight reactions (as a reactant in `reaction_131` and as a product in `reaction_130` and as a modifier in `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_130`, `reaction_131`).

$$\frac{\mathrm{d}}{\mathrm{d}t} \text{species\_153} = v_{130} - v_{131} \qquad (452)$$

10.154 Species `species_154`

Name 80S_aa-tRNA_19

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

This species takes part in seven reactions (as a reactant in `reaction_132` and as a product in `reaction_131` and as a modifier in `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_132`).

$$\frac{\mathrm{d}}{\mathrm{d}t} \text{species\_154} = v_{131} - v_{132} \qquad (453)$$

10.155 Species `species_155`

Name 80S_aa-tRNA_eEF2_GTP_19

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

This species takes part in eight reactions (as a reactant in `reaction_133` and as a product in `reaction_132` and as a modifier in `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_132`, `reaction_133`).

$$\frac{\mathrm{d}}{\mathrm{d}t} \text{species\_155} = v_{132} - v_{133} \qquad (454)$$

10.156 Species `species_156`

Name 80S_tRNA_19

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

This species takes part in seven reactions (as a reactant in `reaction_134` and as a product in `reaction_127` and as a modifier in `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_134`).

$$\frac{\mathrm{d}}{\mathrm{d}t} \text{species\_156} = v_{127} - v_{134} \qquad (455)$$

10.157 Species `species_157`

Name 80S_tRNA_eEF3_GTP_19

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

This species takes part in seven reactions (as a reactant in `reaction_135` and as a product in `reaction_134` and as a modifier in `reaction_43`, `reaction_43`, `reaction_49`, `reaction_49`, `reaction_135`).

$$\frac{\text{d}}{\text{d}t}\text{species\_157} = v_{134} - v_{135} \tag{456}$$

10.158 Species `species_158`

Name 80S_20

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

This species takes part in five reactions (as a reactant in `reaction_140` and as a product in `reaction_137` and as a modifier in `reaction_49`, `reaction_49`, `reaction_140`).

$$\frac{\text{d}}{\text{d}t}\text{species\_158} = v_{137} - v_{140} \tag{457}$$

10.159 Species `species_159`

Name 80S_tRNA_20

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

This species takes part in five reactions (as a reactant in `reaction_136` and as a product in `reaction_133` and as a modifier in `reaction_49`, `reaction_49`, `reaction_136`).

$$\frac{\text{d}}{\text{d}t}\text{species\_159} = v_{133} - v_{136} \tag{458}$$

10.160 Species `species_160`

Name 80S_tRNA_eEF3_GTP_20

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

This species takes part in five reactions (as a reactant in `reaction_137` and as a product in `reaction_136` and as a modifier in `reaction_49`, `reaction_49`, `reaction_137`).

$$\frac{\text{d}}{\text{d}t}\text{species\_160} = v_{136} - v_{137} \tag{459}$$

10.161 Species `species_161`

Name eRF3_GDP

Initial concentration $5.6729353897933 \cdot 10^{-7} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_138` and as a product in `reaction_141` and as a modifier in `reaction_138`).

$$\frac{\text{d}}{\text{d}t}\text{species\_161} = v_{141} - v_{138} \tag{460}$$

10.162 Species `species_162`

Name eRF3_GTP

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

This species takes part in four reactions (as a reactant in `reaction_139` and as a product in `reaction_138` and as a modifier in `reaction_138`, `reaction_139`).

$$\frac{\text{d}}{\text{d}t}\text{species\_162} = v_{138} - v_{139} \tag{461}$$

10.163 Species `species_163`

Name eRF1

Initial concentration $8.91461275538947 \cdot 10^{-7} \, \text{mol} \cdot \text{l}^{-1}$

This species takes part in three reactions (as a reactant in `reaction_139` and as a product in `reaction_141` and as a modifier in `reaction_139`).

$$\frac{\text{d}}{\text{d}t}\text{species\_163} = v_{141} - v_{139} \tag{462}$$

10.164 Species `species_164`

Name eRF1_eRF3_GTP

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

This species takes part in four reactions (as a reactant in `reaction_140` and as a product in `reaction_139` and as a modifier in `reaction_139`, `reaction_140`).

$$\frac{\text{d}}{\text{d}t}\text{species\_164} = v_{139} - v_{140} \tag{463}$$

10.165 Species `species_165`

Name 80S_eRF1_eRF3_GTP

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

This species takes part in three reactions (as a reactant in `reaction_141` and as a product in `reaction_140` and as a modifier in `reaction_141`).

$$\frac{\text{d}}{\text{d}t}\text{species\_165} = v_{140} - v_{141} \tag{464}$$

10.166 Species `species_166`

Name eIF4A_eIF4E_eIF4G_mRNA_Pab1

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

This species takes part in four reactions (as a reactant in `reaction_13` and as a product in `reaction_12` and as a modifier in `reaction_12`, `reaction_13`).

$$\frac{\text{d}}{\text{d}t}\text{species\_166} = v_{12} - v_{13} \tag{465}$$