

S Supplementary Material

This supplement covers the details of the PBRPK model discussed in the presented paper. The information shared here is enough to enable recreating the model from scratch and regenerating the results.

S.1 Naming Convention for Variables

It is often very common in the community of mathematics to show different variables with single letters such as x , α , etc. However, this approach is not really scalable and becomes very challenging in assigning names to variables when there are lots of them in a model. Hence we developed our own naming convention in developing our PBRPK model which makes it easily scalable.

The naming conventions are quite similar to the strategy when we use object-oriented programming. For instance, suppose that you want to refer to the hot (i.e. labeled) radiopharmaceuticals in the interstitial space of the liver. The name of that variable will be like:

Liver.int.H

in which “int” reflects the interstitial space, and “H” reflects the hot radiopharmaceuticals.

S.2 Structure of the model

As we discussed in the presented paper, the PBRPK model is created by connecting different organs to each other using ordinary differential equations. Lungs, heart, adipose, skin, bone, red marrow, and muscle are considered as the receptor-negative organs (that do not express any PSMA binding sites), while the liver, spleen, salivary glands, prostate, GI, tumor, and kidney are considered as receptor-positive organs which means that they effectively express PSMA binding sites.

Receptor-negative organs do not have any radiopharmaceutical uptake while the receptor-positive organs have radiopharmaceutical uptakes. This uptake can be in the form of specific uptake (bound to actual receptors), or non-specific uptake (which still can be modeled as binding to some imaginary receptors). The organs in each category have a very similar structure and are only distinguished due to the different parameters that they have. In the following section, we will explain the internal structure of each category of organs.

S.2.1 Internal Structure of the Organs in PBRPK

All receptor-negative organs have a similar structure which is shown in [Figure S1](#). The only exception is the lungs in which the inflow of blood into the organ is from veins (instead of arteries) and the outflow of blood from the lungs is to the arteries.

In contrast, for the receptor-positive organs, we will have slightly different structures to take the receptor binding and internalization process into account (see [Figure S2](#)) However, due to the complex nature of the kidney, it has its own dedicated structure design to take the kidney functions into account (see [Figure S3](#)).

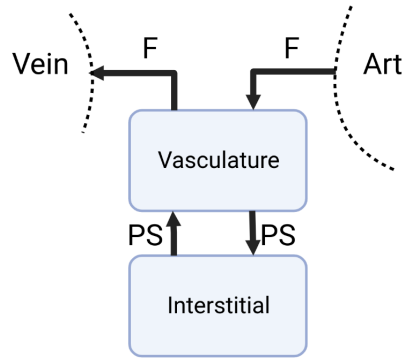


Fig. S1: Compartmentalized structure of the receptor-negative organs. Note that there are no “bound” and “intern” compartments, which reflects the fact that the organ is receptor-negative.

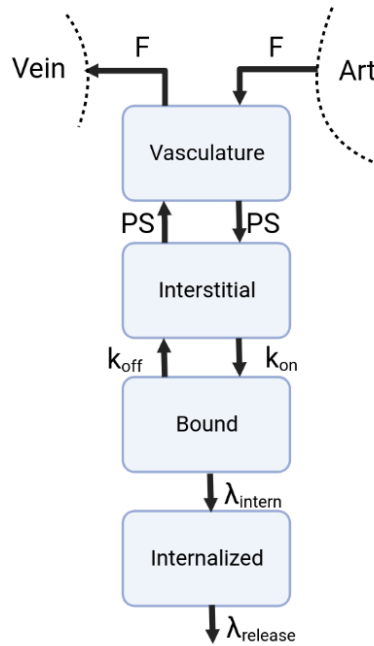


Fig. S2: Compartmentalized structure of the receptor-positive organs.

At each compartment (as the inner structure of the organs), there are generally five distinct species called H, C, AH, AC, Alb which stands for hot and cold (labeled and unlabeled) radiopharmaceuticals, hot-albumin and cold-albumin complex and albumin itself respectively. These species interact with each other which can be summarized in a “reaction graph” (see [Figure S4](#)).

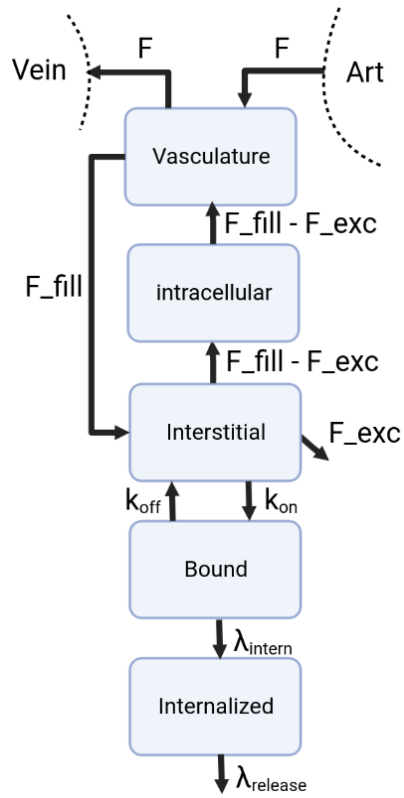


Fig. S3: Compartmentalized structure of the kidney. The distinct feature of kidney in filtering the blood leads to its different structure than other receptor-positive organs.

This reaction graph can be fully described by a system of ODEs as following

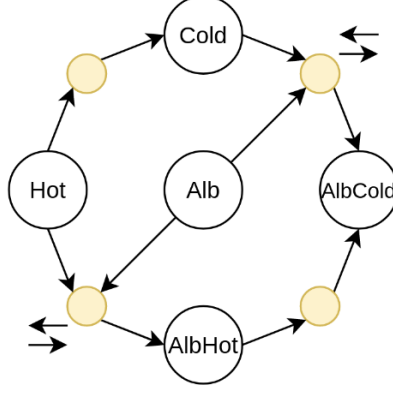


Fig. S4: Interactions of the different species with each other. The yellow circles represent the reactions between species and those circles labeled with a two-way arrow indicate that the reaction is a two-way reaction. The reactions that are not two-way are the decay process of radiopharmaceuticals.

$$\frac{dH}{dt} = -\lambda H - k_{on}^{alb} H * [Alb] + k_{off}^{alb} AH \quad (S1)$$

$$\frac{dC}{dt} = \lambda H - k_{on}^{alb} C * [Alb] + k_{off}^{alb} AC \quad (S2)$$

$$\frac{dAH}{dt} = -\lambda AH + k_{on}^{alb} H * [Alb] - k_{off}^{alb} AH \quad (S3)$$

$$\frac{dAC}{dt} = \lambda AH + k_{on}^{alb} C * [Alb] - k_{off}^{alb} AC \quad (S4)$$

$$Alb = Alb_0 - AH - AC \quad (S5)$$

Using the fact that these species are repeated in each compartment, we can now describe the concentration of each of these species in each compartment by writing a differential equation. Because the ODE for all receptor-negative organs (same as receptor-positive organs) looks similar to each other (except for the numerical values of the parameters as well as the variable names), we explicitly write the ODE system for just one organ from each category here. However, the full details of all of the equations can be found in the table (auto-generated by the Simbiology package in Matlab) attached at the end of this supplementary file (see [subsection S.4](#)).

The ODE system for any receptor-negative organ (name it X) will be like this:

$$\frac{dX.vas.H}{dt} = Q_1 - \lambda X.vas.H - k_{on}^{alb} X.vas.H * [X.vas.Alb] + k_{off}^{alb} X.vas.AH \quad (S6)$$

$$\frac{dX.vas.C}{dt} = Q_2 + \lambda X.vas.H - k_{on}^{alb} X.vas.C * [X.vas.Alb] + k_{off}^{alb} X.vas.AC \quad (S7)$$

$$\frac{dX.vas.AH}{dt} = Q_3 - \lambda X.vas.AH + k_{on}^{alb} X.vas.H * [X.vas.Alb] - k_{off}^{alb} X.vas.AH \quad (S8)$$

$$\frac{dX.vas.AC}{dt} = Q_4 + \lambda X.vas.AH + k_{on}^{alb} X.vas.C * [X.vas.Alb] - k_{off}^{alb} X.vas.AC \quad (S9)$$

$$\frac{dX.int.H}{dt} = Q_5 - \lambda X.int.H \quad (S10)$$

$$\frac{dX.int.C}{dt} = Q_6 + \lambda X.int.H \quad (S11)$$

$$X.vas.Alb = X.vas.Alb_0 - X.vas.AH - X.vas.AC \quad (S12)$$

in which we have

$$Q_1 = F_X([art.H] - [X.vas.H]) + PS_X([X.int.H] - [X.vas.H]) \quad (S13)$$

$$Q_2 = F_X([art.C] - [X.vas.C]) + PS_X([X.int.C] - [X.vas.C]) \quad (S14)$$

$$Q_3 = F_X([art.AH] - [X.vas.AH]) + PS_X([X.int.AH] - [X.vas.AH]) \quad (S15)$$

$$Q_4 = F_X([art.AC] - [X.vas.AC]) + PS_X([X.int.AC] - [X.vas.AC]) \quad (S16)$$

$$Q_5 = PS_X([X.vas.H] - [X.int.H]) \quad (S17)$$

$$Q_6 = PS_X([X.vas.C] - [X.int.C]) \quad (S18)$$

Note that the variables inside bracket $[\cdot]$ represent the concentration of that variable. For instance, we have

$$[X.vas.H] = \frac{X.vas.H}{V_{\mathbf{X},\mathbf{v}}}$$

in which $V_{\mathbf{X},\mathbf{v}}$ is the interstitial volume of the organ X.

Similarly, we can write the ODE system for the receptor-positive systems. The ODE system for the reaction graph for receptor-positive organs will be like the following:

$$\frac{dX.vas.H}{dt} = T_1 - \lambda X.vas.H - k_{on}^{alb} X.vas.H * [X.vas.Alb] + k_{off}^{alb} X.vas.AH \quad (S19)$$

$$\frac{dX.vas.C}{dt} = T_2 + \lambda X.vas.H - k_{on}^{alb} X.vas.C * [X.vas.Alb] + k_{off}^{alb} X.vas.AC \quad (S20)$$

$$\frac{dX.vas.AH}{dt} = T_3 - \lambda X.vas.AH + k_{on}^{alb} X.vas.H * [X.vas.Alb] - k_{off}^{alb} X.vas.AH \quad (S21)$$

$$\frac{dX.vas.AC}{dt} = T_4 + \lambda X.vas.AH + k_{on}^{alb} X.vas.C * [X.vas.Alb] - k_{off}^{alb} X.vas.AC \quad (S22)$$

$$\frac{dX.int.H}{dt} = T_5 - \lambda X.int.H - k_{on}^{alb} X.int.H * [X.int.Alb] + k_{off}^{alb} X.int.AH \quad (S23)$$

$$\frac{dX.int.C}{dt} = T_6 + \lambda X.int.H - k_{on}^{alb} X.int.C * [X.int.Alb] + k_{off}^{alb} X.int.AC \quad (S24)$$

$$\frac{dX.int.AH}{dt} = T_7 - \lambda X.int.AH + k_{on}^{alb} X.int.H * [X.int.Alb] - k_{off}^{alb} X.int.AH \quad (S25)$$

$$\frac{dX.int.AC}{dt} = T_8 + \lambda X.int.AH + k_{on}^{alb} X.int.C * [X.int.Alb] - k_{off}^{alb} X.int.AC \quad (S26)$$

$$\frac{dX.bound.H}{dt} = T_9 - \lambda X.int.H - k_{on}^{alb} X.int.H * [X.int.Alb] + k_{off}^{alb} X.int.AH \quad (S27)$$

$$\frac{dX.bound.C}{dt} = T_{10} + \lambda X.int.H - k_{on}^{alb} X.int.C * [X.int.Alb] + k_{off}^{alb} X.int.AC \quad (S28)$$

$$\frac{dX.intern.H}{dt} = T_{11} - \lambda X.int.H - k_{on}^{alb} X.int.H * [X.int.Alb] + k_{off}^{alb} X.int.AH \quad (S29)$$

$$\frac{dX.intern.C}{dt} = T_{12} + \lambda X.int.H - k_{on}^{alb} X.int.C * [X.int.Alb] + k_{off}^{alb} X.int.AC \quad (S30)$$

$$X.vas.Alb = X.vas.Alb_0 - X.vas.AH - X.vas.AC \quad (S31)$$

$$X.int.Alb = X.int.Alb_0 - X.int.AH - X.int.AC \quad (S32)$$

in which we have

$$T_1 = F_X([art.H] - [X.vas.H]) + PS_X([X.int.H] - [X.vas.H]) \quad (S33)$$

$$T_2 = F_X([art.C] - [X.vas.C]) + PS_X([X.int.C] - [X.vas.C]) \quad (S34)$$

$$T_3 = F_X([art.AH] - [X.vas.AH]) + PS_X([X.int.AH] - [X.vas.AH]) \quad (S35)$$

$$T_4 = F_X([art.AC] - [X.vas.AC]) + PS_X([X.int.AC] - [X.vas.AC]) \quad (S36)$$

$$T_5 = PS_X([X.vas.H] - [X.int.H]) - k_{on}X.R[X.int.H] + k_{off}X.bound.H \quad (S37)$$

$$T_6 = PS_X([X.vas.C] - [X.int.C]) - k_{on}X.R[X.int.C] + k_{off}X.bound.C \quad (S38)$$

$$T_7 = PS_X([X.vas.AC] - [X.int.AC]) - k_{on}X.R[X.int.AC] + k_{off}X.bound.AC \quad (S39)$$

$$T_8 = PS_X([X.vas.AH] - [X.int.AH]) - k_{on}X.R[X.int.AH] + k_{off}X.bound.AH \quad (S40)$$

$$T_9 = k_{on}X.R[X.int.H] - (k_{off} + X.\lambda_{int})X.bound.H \quad (S41)$$

$$T_{10} = k_{on}X.R[X.int.C] - (k_{off} + X.\lambda_{int})X.bound.C \quad (S42)$$

$$T_{11} = X.\lambda_{int}X.bound.H - X.\lambda_{rel}X.intern.H \quad (S43)$$

$$T_{12} = X.\lambda_{int}X.bound.C - X.\lambda_{rel}X.intern.C \quad (S44)$$

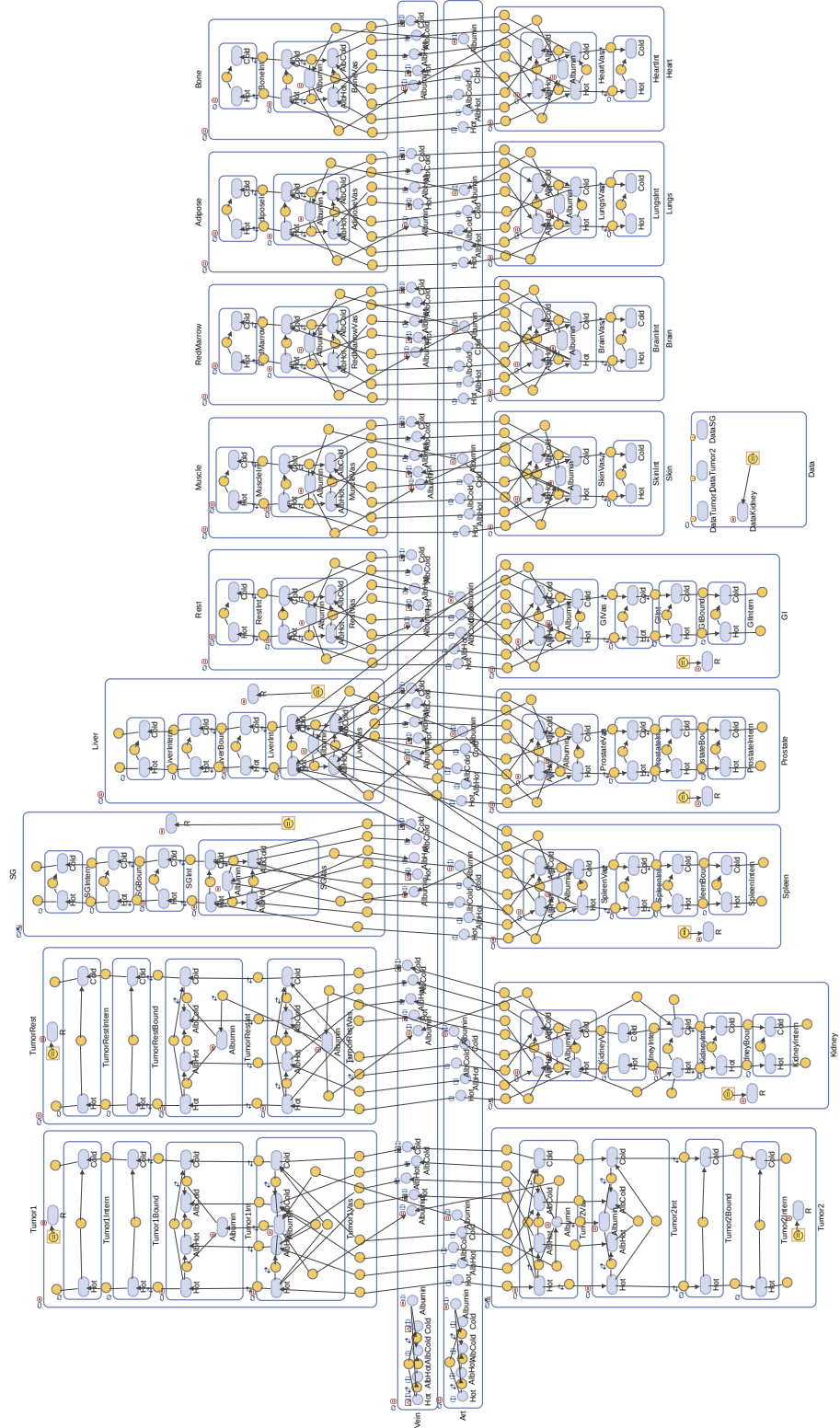


Fig. S5: The structure of PBPK model as implemented in Simbiology Matlab.

S.3 S-Values and Dose Calculation

Understanding the concept of radiation dose and radiation dose rate, as well as their units of measurement, is crucial for calculating radiation dose. Radiation dose, specifically radiation absorbed dose (D), quantifies the total energy absorbed by one unit of mass of a substance. In the SI Unit System, the absorbed dose is measured in gray (Gy), where 1 Gy equals 1 joule (J) of energy absorbed per kilogram of substance. Commonly used derived units from gray are centigray ($\text{cGy} = 10^{-2}$ Gy) and milligray ($\text{mGy} = 10^{-3}$ Gy). The older unit of radiation dose is rad, which represents 100 ergs ($1 \text{ erg} = 10^{-7} \text{ J}$) of absorbed energy per gram of tissue or substance. One rad is equivalent to $(1/100)$ Gy or one cGy, and 1 Gy equals 100 rad. On the other hand, radiation dose rate (dD/dt) measures the amount of energy absorbed per unit of time per unit mass of tissue. It can be expressed in units such as mGy (rad) per minute, cGy (rad) per hour, or Gy (rad) per day.

In order to calculate radiation dose, it is necessary to determine the average energy absorbed by 1 gram of tissue in a target organ from the total energy released by the decay of a specific amount of radioactivity. Since x-rays or γ -rays are highly penetrating, a small source emitting these types of radiation, localized anywhere in the body, will irradiate virtually all organs. For instance, if a radionuclide emitting x-rays or γ -rays is localized solely in the liver (source S), it will deliver radiation dose not only to the liver but also to all other organs (targets T) in the body. Therefore, when a radiopharmaceutical is localized in multiple organs (sources), the radiation dose from each source to each organ (target) must be calculated. Only then can all the contributions be added together to determine the final radiation dose for each organ.

The process of determining radiation dose involves essential steps [1]. Firstly, calculate the rate of energy emission (erg/h) from the different types of radiation emitted by the radionuclide within the source volume. Next, determining the rate of energy absorption from these radiations by the target volume. Next, from the above-mentioned, calculating the average dose rate, dD/dt . This dose rate can be captured via the S-Values (shown in Table S1 and Table S2 for Lu-177 self-absorbed doses). Finally, calculating the average dose, D , by multiplying the S-values with the time-integrated activity (TIA). S-values rely on physical data, such as decay characteristics, and organ shape and size. On the other hand, the TIA necessitates radiopharmaceutical distribution data.

Table S1: S-Values for tumor and salivary glands. Table adapted from [2].

Volume [ml]	S-values [$Gy * min^{-1} * MBq^{-1}$]
0.5	$2.77 * 10^{-3}$
1	$1.40 * 10^{-3}$
1.5	$9.00 * 10^{-4}$
2	$7.02 * 10^{-4}$
3	$4.50 * 10^{-4}$
4	$3.52 * 10^{-4}$
13	$1.10 * 10^{-4}$
17	$8.30 * 10^{-5}$
21	$6.90 * 10^{-5}$
29	$4.80 * 10^{-5}$
34	$4.30 * 10^{-5}$
52	$2.67 * 10^{-5}$
54	$2.65 * 10^{-5}$

Table S2: S-Values used for kidney dose calculation. Table adapted from [2].

Organ	S-values [$Gy * min^{-1} * MBq^{-1}$]
Kidney	$4.82 * 10^{-6}$

S.4 Parameter Values

The following table summarizes the parameter values used for the simulation. Note that the values printed in the “initial values” column are the values used as the initial condition to solve the ODE system. The values printed under the “value” column are intermediate values that are transformed into initial values by the “initial assignments”, which are also listed as separate tables in this section.

Model: testModel

Compartments

	Compartment Name	Scope	Value	Initial Value	Units
1	Tumor2Vas	Tumor2	1	0.0102	liter
2	Tumor2	testModel	1	0.34	liter
3	Tumor2Int	Tumor2	1	0.1292	liter
4	Tumor2Bound	Tumor2	1	1	liter
5	Tumor2Intern	Tumor2	1	1	liter
6	Art	testModel	1	0.33516	liter
7	Vein	testModel	1	0.7182	liter
8	Tumor1	testModel	1	0.01	liter
9	Tumor1Vas	Tumor1	1	0.0003	liter
10	Tumor1Int	Tumor1	1	0.0038	liter
11	Tumor1Bound	Tumor1	1	1	liter
12	Tumor1Intern	Tumor1	1	1	liter
13	Kidney	testModel	1	0.311	liter
14	KidneyVas	Kidney	1	0.017105	liter
15	KidneyInt	Kidney	1	0.04665	liter
16	KidneyBound	Kidney	1	1	liter
17	KidneyIntern	Kidney	1	1	liter
18	Heart	testModel	1	0.48028	liter
19	HeartVas	Heart	1	0.03192	liter
20	HeartInt	Heart	1	0.1181	liter
21	SG	testModel	1	0.021	liter
22	SGVas	SG	1	0.000378	liter
23	SGInt	SG	1	0.00483	liter
24	SGBound	SG	1	1	liter
25	SGIntern	SG	1	1	liter
26	Bone	testModel	1	12.7676	liter
27	BoneVas	Bone	1	0.09576	liter
28	BoneInt	Bone	1	0.80438	liter
29	TumorRest	testModel	1	0.048872	liter
30	TumorRestVas	TumorRest	1	0.0014662	liter
31	TumorRestInt	TumorRest	1	0.018571	liter
32	TumorRestBound	TumorRest	1	1	liter
33	TumorRestIntern	TumorRest	1	1	liter
34	Spleen	testModel	1	0.183	liter
35	SpleenVas	Spleen	1	0.02196	liter
36	SpleenInt	Spleen	1	0.0366	liter
37	SpleenBound	Spleen	1	1	liter
38	SpleenIntern	Spleen	1	1	liter
39	Liver	testModel	1	1.91	liter
40	LiverVas	Liver	1	0.16235	liter
41	LiverInt	Liver	1	0.382	liter
42	LiverBound	Liver	1	1	liter
43	LiverIntern	Liver	1	1	liter
44	Prostate	testModel	1	0.022535	liter
45	ProstateVas	Prostate	1	5.4085e-05	liter
46	ProstateInt	Prostate	1	0.0056338	liter
47	ProstateBound	Prostate	1	1	liter
48	ProstateIntern	Prostate	1	1	liter
49	GI	testModel	1	1.6718	liter
50	GIVas	GI	1	0.24259	liter
51	GIInt	GI	1	2.1348	liter
52	GIBound	GI	1	1	liter
53	GIIntern	GI	1	1	liter

54	Rest	testModel	1	11.5046	liter
55	RestVas	Rest	1	1.4165	liter
56	RestInt	Rest	1	5.8076	liter
57	Skin	testModel	1	4.8	liter
58	SkinVas	Skin	1	0.09576	liter
59	SkinInt	Skin	1	0.85226	liter
60	Muscle	testModel	1	42.3634	liter
61	MuscleVas	Muscle	1	0.44688	liter
62	MuscleInt	Muscle	1	2.6366	liter
63	Brain	testModel	1	2.0423	liter
64	BrainVas	Brain	1	0.038304	liter
65	BrainInt	Brain	1	1	liter
66	RedMarrow	testModel	1	1.5493	liter
67	RedMarrowVas	RedMarrow	1	0.12768	liter
68	RedMarrowInt	RedMarrow	1	0.47242	liter
69	Lungs	testModel	1	1.4085	liter
70	LungsVas	Lungs	1	0.33516	liter
71	LungsInt	Lungs	1	1.8434	liter
72	Adipose	testModel	1	18.9648	liter
73	AdiposeVas	Adipose	1	0.1596	liter
74	AdiposeInt	Adipose	1	2.4738	liter
75	KidneyIntera	Kidney	1	0.16483	liter
76	Data	testModel	1	1	liter

Species in Tumor2Vas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in Tumor2

	Species Name	Value	Initial Value	Units
1	R	0	6.46	nanomole

Species in Tumor2Int

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in Tumor2Bound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Tumor2Intern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Art

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole

4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in Vein

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in Tumor1

	Species Name	Value	Initial Value	Units
1	R	0	0.57	nanomole

Species in Tumor1Vas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in Tumor1Int

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in Tumor1Bound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Tumor1Intern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Kidney

	Species Name	Value	Initial Value	Units
1	R	0	4.354	nanomole

Species in KidneyVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in KidneyInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in KidneyBound

	Species Name	Value	Initial Value	Units

1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in KidneyIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in HeartVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in HeartInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in SG

	Species Name	Value	Initial Value	Units
1	R	0	0.798	nanomole

Species in SGVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in SGInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in SGBound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in SGIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in BoneVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in BoneInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in TumorRest

	Species Name	Value	Initial Value	Units
1	R	0	13	nanomole

Species in TumorRestVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in TumorRestInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in TumorRestBound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in TumorRestIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Spleen

	Species Name	Value	Initial Value	Units
1	R	0	0.097356	nanomole

Species in SpleenVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in SpleenInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in SpleenBound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in SpleenIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Liver

	Species Name	Value	Initial Value	Units
1	R	0	2.5403	nanomole

Species in LiverVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in LiverInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in LiverBound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in LiverIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Prostate

	Species Name	Value	Initial Value	Units
1	R	0	0.59944	nanomole

Species in ProstateVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in ProstateInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in ProstateBound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in ProstateIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in GI

	Species Name	Value	Initial Value	Units
1	R	0	2.6682	nanomole

Species in GIVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole

5	Albumin	0	0	nanomole
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Species in GIInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in GIBound

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in GIIntern

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in RestVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in RestInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in SkinVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in SkinInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in MuscleVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in MuscleInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in BrainVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in BrainInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in RedMarrowVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in RedMarrowInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in LungsVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in LungsInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in AdiposeVas

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole
3	AlbHot	0	0	nanomole
4	AlbCold	0	0	nanomole
5	Albumin	0	0	nanomole

Species in AdiposeInt

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in KidneyIntera

	Species Name	Value	Initial Value	Units
1	Hot	0	0	nanomole
2	Cold	0	0	nanomole

Species in Data

	Species Name	Value	Initial Value	Units
1	DataTumor1	0	0	nanomole
2	DataTumor2	0	0	nanomole
3	DataSG	0	0	nanomole
4	DataKidney	0	0	nanomole

Model Scoped and Reaction Scoped Parameters

	Parameter Name	Value	Initial Value	Units
1	lambdaPhys	7.15e-05	7.15e-05	1/minute
2	k_on_toAlb	1	0	liter/nanomole/minute
3	k_off_toAlb	1	0	1/minute
4	k_on	0.046	0.046	liter/nanomole/minute
5	k_off	0.368	0.368	1/minute
6	k_on_AlPharm	0	0	liter/nanomole/minute
7	k_off_AlPharm	0	0	1/minute
8	F_Tumor1	-1	0.005	liter/minute
9	PSAlb_Tumor1	-1	0	liter/minute
10	PS_Tumor1	-1	0.006	liter/minute
11	Rden_Tumor1	-1	57	nanomole/liter
12	R0_Tumor1	-1	0.57	nanomole
13	lambdaIntern_Tumor1	0.001	0.001	1/minute
14	lambdaRel_Tumor1	-1	0.00015	1/minute
15	F_Tumor2	-1	0.17	liter/minute
16	PSAlb_Tumor2	-1	0	liter/minute
17	PS_Tumor2	-1	0.204	liter/minute
18	Rden_Tumor2	-1	19	nanomole/liter
19	R0_Tumor2	-1	6.46	nanomole
20	lambdaIntern_Tumor2	0.001	0.001	1/minute
21	lambdaRel_Tumor2	-1	0.00015	1/minute
22	F_TumorRest	-1	0.024436	liter/minute
23	PSAlb_TumorRest	-1	0	liter/minute
24	PS_TumorRest	-1	0.029323	liter/minute
25	Rden_TumorRest	266	266	nanomole/liter
26	R0_TumorRest	-1	13	nanomole
27	lambdaIntern_TumorRest	0.001	0.001	1/minute
28	lambdaRel_TumorRest	-1	0.00015	1/minute
29	F_SG	-1	0.001554	liter/minute
30	PS_SG	-1	0.042	liter/minute
31	Rden_SG	-1	38	nanomole/liter
32	R0_SG	-1	0.798	nanomole
33	lambdaIntern_SG	-1	0.001	1/minute
34	lambdaRel_SG	-1	0.00042	1/minute
35	F_Spleen	-1	0.11778	liter/minute
36	PS_Spleen	-1	0.366	liter/minute
37	Rden_Spleen	-1	0.532	nanomole/liter
38	R0_Spleen	-1	0.097356	nanomole
39	lambdaIntern_Spleen	-1	0.001	1/minute
40	lambdaRel_Spleen	-1	0.00029	1/minute
41	F_Prostate	-1	0.0024338	liter/minute
42	PS_Prostate	-1	0.0022535	liter/minute
43	Rden_Prostate	-1	26.6	nanomole/liter
44	R0_Prostate	-1	0.59944	nanomole
45	lambdaIntern_Prostate	-1	0.001	1/minute
46	lambdaRel_Prostate	-1	0.00029	1/minute
47	F_Liver	-1	0.2552	liter/minute
48	PS_Liver	-1	3.82	liter/minute
49	Rden_Liver	-1	1.33	nanomole/liter
50	R0_Liver	-1	2.5403	nanomole
51	lambdaIntern_Liver	-1	0.001	1/minute
52	lambdaRel_Liver	-1	0.00029	1/minute
53	F_GI	-1	0.62819	liter/minute
54	PS_GI	-1	0.033437	liter/minute
55	Rden_GI	-1	1.596	nanomole/liter
56	R0_GI	-1	0.00000	nanomole

56	R0_GI	-1	2.6682	nanomole
57	lambdaIntern_GI	-1	0.001	1/minute
58	lambdaRel_GI	-1	0.00029	1/minute
59	F_Rest	-1	0.17269	liter/minute
60	PS_Rest	-1	0.23009	liter/minute
61	F_Muscle	-1	0.66745	liter/minute
62	PS_Muscle	-1	0.84727	liter/minute
63	F_Skin	-1	0.19631	liter/minute
64	PS_Skin	-1	0.096	liter/minute
65	F_RedMarrow	-1	0.11778	liter/minute
66	PS_RedMarrow	-1	3.0986	liter/minute
67	F_Brain	-1	0.47114	liter/minute
68	PS_Brain	-1	0	liter/minute
69	F_Adipose	-1	0.19631	liter/minute
70	PS_Adipose	-1	0.3793	liter/minute
71	F_Bone	-1	0.19631	liter/minute
72	PS_Bone	-1	0.25535	liter/minute
73	F_Heart	-1	0.15705	liter/minute
74	PS_Heart	-1	0.0096056	liter/minute
75	F_Lungs	-1	3.9262	liter/minute
76	PS_Lungs	-1	2.8169	liter/minute
77	F_Kidney	-1	0.74597	liter/minute
78	TER_Kidney	-1	0.2	liter/minute
79	Rden_Kidney	-1	14	nanomole/liter
80	R0_Kidney	-1	4.354	nanomole
81	lambdaIntern_Kidney	-1	0.001	1/minute
82	lambdaRel_Kidney	-1	0.00029	1/minute
83	GFR	-1	0.088742	liter/minute
84	phi	0.66	0.66	dimensionless
85	f_exc	0.96	0.96	dimensionless
86	lambdaIntern_Normal	-1	0.001	1/minute
87	lambdaRel_Normal	-1	0.00029	1/minute
88	density	1	1	kilogram/liter
89	bodySurfaceArea	-1	1.9	meter^2
90	hematocrit	0.4	0.4	dimensionless
91	bodyHeight	-1	160	meter
92	bodyWeight	-1	100	kilogram
93	F	-1	3.9262	liter/minute
94	V_p	-1	3.192	liter
95	kPS_Tumor1	0.6	0.6	1/minute
96	kPS_Tumor2	0.6	0.6	1/minute
97	kPS_TumorRest	0.6	0.6	1/minute
98	kPS_SG	-1	2	1/minute
99	kPS_Spleen	-1	2	1/minute
100	kPS_Prostate	-1	0.1	1/minute
101	kPS_Liver	-1	2	1/minute
102	kPS_Rest	-1	0.02	1/minute
103	kPS_GI	-1	0.02	1/minute
104	kPS_Muscle	0.02	0.02	1/minute
105	kPS_Skin	-1	0.02	1/minute
106	kPS_Brain	0	0	1/minute
107	kPS_RedMarrow	-1	2	1/minute
108	kPS_Adipose	-1	0.02	1/minute
109	kPS_Bone	-1	0.02	1/minute
110	kPS_Heart	-1	0.02	1/minute
111	kPS_Lungs	-1	2	1/minute
112	kPSAlb_Tumor1	-1	0	1/minute

113	kPSAlb_Tumor2	-1	0	1/minute
114	kPSAlb_TumorRest	-1	0	1/minute
115	F_Total	1	4.1256	liter/minute
116	f_SG	1	0.074	1/minute
117	f_Prostate	1	0.108	1/minute
118	f_Tumor1	0.5	0.5	1/minute
119	f_Tumor2	0.5	0.5	1/minute
120	HotTotalAmountOriginal	10	10	nanomole
121	ColdTotalAmountOriginal	100	100	nanomole
122	RepeatTimeInterval	100	100	minute
123	RepeatCount	0	0	dimensionless
124	PerInjectionRate	100	100	nanomole/minute
125	HotPerInjection	0	20	nanomole
126	ColdPerInjection	0	200	nanomole
127	dMin	1	1	minute
128	dLiter	1	1	liter
129	dMeter	1	1	meter
130	dLiterKg	1	1	liter/kilogram
131	numberPerNanomole	602200000000000	602200000000000	dimensionless
132	Tumor1VolumeCoeff	1	1	dimensionless
133	Tumor1Volume	-1	0.01	liter
134	Albumin_0	-1	0	nanomole
135	AlbuminDen	-1	0	nanomole/liter
136	K_D_Alb	-1	1	nanomole/liter
137	injectionCoeff	2	2	dimensionless
138	HotTotalAmount	1	20	nanomole
139	ColdTotalAmount	1	200	nanomole
140	Rden_Tumor1_Coeff	1	1	dimensionless

Initial Assignments

	Initial Assignments	Initial Value
1	PS_Tumor1 = kPS_Tumor1 * Tumor1	0.006
2	PSAlb_Tumor1 = kPSAlb_Tumor1 * Tumor1	0
3	PS_Tumor2 = kPS_Tumor2 * Tumor2	0.204
4	PSAlb_Tumor2 = kPSAlb_Tumor2 * Tumor2	0
5	PS_TumorRest = kPS_TumorRest * TumorRest	0.029323
6	PSAlb_TumorRest = kPSAlb_TumorRest * TumorRest	0
7	PS_SG = kPS_SG * SG	0.042
8	PS_Liver = kPS_Liver * Liver	3.82
9	PS_Spleen = kPS_Spleen * Spleen	0.366
10	PS_Prostate = kPS_Prostate * Prostate	0.0022535
11	PS_GI = kPS_GI * GI	0.033437
12	PS_Rest = kPS_Rest * Rest	0.23009
13	PS_Muscle = kPS_Muscle * Muscle	0.84727
14	PS_RedMarrow = kPS_RedMarrow*RedMarrow	3.0986
15	PS_Adipose = kPS_Adipose * Adipose	0.3793
16	PS_Bone = kPS_Bone * Bone	0.25535
17	PS_Heart = kPS_Heart * Heart	0.0096056
18	PS_Lungs = kPS_Lungs * Lungs	2.8169
19	PS_Brain = kPS_Brain * Brain	0
20	PS_Skin = kPS_Skin * Skin	0.096
21	F_Muscle = 0.17 * F	0.66745
22	F_GI = 0.16 * F	0.62819
23	F_Skin = 0.05 * F	0.19631
24	F_Adipose = 0.05 * F	0.19631
25	F_RedMarrow = 0.03 * F	0.11778
26	F_Bone = 0.05 * F	0.19631

27	$F_Heart = 0.04 * F$	0.15705
28	$F_Brain = 0.12 * F$	0.47114
29	$F_Rest = F - (F_Brain + F_Heart + F_Bone + F_RedMarrow + F_Adipose + F_Skin + F_GI + F_Muscle + F_Liver + F_Kidney + F_Spleen + F_Prostate + F_SG)$	0.17269
30	$F_Total = F + F_Tumor1 + F_Tumor2 + F_TumorRest$	4.1256
31	$F_Prostate = f_Prostate * Prostate$	0.0024338
32	$F_SG = f_SG * SG$	0.001554
33	$F_Liver = 0.065 * F$	0.2552
34	$F_Spleen = 0.03 * F$	0.11778
35	$F_Kidney = 0.19 * F$	0.74597
36	$F_Tumor1 = f_Tumor1 * Tumor1$	0.005
37	$F_Tumor2 = f_Tumor2 * Tumor2$	0.17
38	$F_TumorRest = f_Tumor1 * R0_TumorRest / Rden_TumorRest$	0.024436
39	$Tumor1Vas = 0.05 * (1 - hematocrit) * Tumor1$	0.0003
40	$Tumor1Int = 0.38 * Tumor1$	0.0038
41	$Tumor2Vas = 0.05 * (1 - hematocrit) * Tumor2$	0.0102
42	$Tumor2Int = 0.38 * Tumor2$	0.1292
43	$TumorRest = R0_TumorRest / Rden_TumorRest$	0.048872
44	$TumorRestVas = 0.05 * (1 - hematocrit) * TumorRest$	0.0014662
45	$TumorRestInt = 0.38 * TumorRest$	0.018571
46	$Spleen = 0.183$	0.183
47	$SpleenVas = 0.12 * Spleen$	0.02196
48	$SpleenInt = 0.2 * Spleen$	0.0366
49	$SGVas = 0.03 * (1 - hematocrit) * SG$	0.000378
50	$SGInt = 0.23 * SG$	0.00483
51	$Liver = 1.91$	1.91
52	$LiverVas = 0.085 * Liver$	0.16235
53	$LiverInt = 0.2 * Liver$	0.382
54	$Prostate = 0.016 * bodyWeight / 71 * dLiterKg$	0.022535
55	$ProstateVas = 0.004 * (1 - hematocrit) * Prostate$	5.4085e-05
56	$ProstateInt = 0.25 * Prostate$	0.0056338
57	$GI = (0.385 + 0.548 + 0.104 + 0.15) * bodyWeight / 71 * dLiterKg$	1.6718
58	$GIInt = 8.8 * GIVas$	2.1348
59	$GIVas = 0.076 * V_p$	0.24259
60	$Rest = bodyWeight * dLiterKg - (Lungs + Brain + Heart + Bone + RedMarrow + Adipose + Skin + GI + Muscle + Liver + Kidney + Spleen + Prostate + SG)$	11.5046
61	$RestInt = 4.1 * RestVas$	5.8076
62	$RestVas = V_p - (LungsVas + BrainVas + HeartVas + BoneVas + RedMarrowVas + AdiposeVas + SkinVas + GIVas + MuscleVas + LiverVas + KidneyVas + SpleenVas + ProstateVas + SGVas)$	1.4165
63	$Muscle = 30.078 * bodyWeight / 71 * dLiterKg$	42.3634
64	$MuscleVas = 0.14 * V_p$	0.44688
65	$MuscleInt = 5.9 * MuscleVas$	2.6366
66	$Skin = 3.408 * bodyWeight / 71 * dLiterKg$	4.8
67	$SkinVas = 0.03 * V_p$	0.09576
68	$SkinInt = 8.9 * SkinVas$	0.85226
69	$Brain = 1.45 * bodyWeight / 71 * dLiterKg$	2.0423
70	$BrainVas = 0.012 * V_p$	0.038304
71	$BrainInt = 1 * dLiter$	1
72	$Lungs = 1 * bodyWeight / 71 * dLiterKg$	1.4085
73	$LungsVas = 0.105 * V_p$	0.33516
74	$LungsInt = 5.5 * LungsVas$	1.8434
75	$Heart = 0.341 * bodyWeight / 71 * dLiterKg$	0.48028
76	$HeartVas = 0.01 * V_p$	0.03192
77	$HeartInt = 3.7 * HeartVas$	0.1181
78	$Bone = 10.165 * bodyWeight / 71 * dLiterKg - RedMarrow$	12.7676

79	$\text{BoneVas} = 0.07 \cdot V_p - \text{RedMarrowVas}$	0.09576
80	$\text{BoneInt} = 8.4 \cdot \text{BoneVas}$	0.80438
81	$\text{Adipose} = 13.465 \cdot \text{bodyWeight} / 71 \cdot \text{dLiterKg}$	18.9648
82	$\text{AdiposeVas} = 0.05 \cdot V_p$	0.1596
83	$\text{AdiposeInt} = 15.5 \cdot \text{AdiposeVas}$	2.4738
84	$\text{RedMarrow} = 1.1 \cdot \text{bodyWeight} / 71 \cdot \text{dLiterKg}$	1.5493
85	$\text{RedMarrowVas} = 0.04 \cdot V_p$	0.12768
86	$\text{RedMarrowInt} = 3.7 \cdot \text{RedMarrowVas}$	0.47242
87	$\text{KidneyIntera} = (\text{Kidney} - \text{KidneyInt} - \text{KidneyVas}) \cdot 2/3$	0.16483
88	$\text{KidneyVas} = 0.055 \cdot \text{Kidney}$	0.017105
89	$\text{KidneyInt} = 0.15 \cdot \text{Kidney}$	0.04665
90	$R0_Tumor1 = \text{Rden_Tumor1} \cdot \text{Tumor1}$	0.57
91	$R0_Tumor2 = \text{Rden_Tumor2} \cdot \text{Tumor2}$	6.46
92	$R0_Kidney = \text{Rden_Kidney} \cdot \text{Kidney}$	4.354
93	$R0_Spleen = \text{Rden_Spleen} \cdot \text{Spleen}$	0.097356
94	$R0_Prostate = \text{Rden_Prostate} \cdot \text{Prostate}$	0.59944
95	$R0_GI = \text{Rden_GI} \cdot GI$	2.6682
96	$R0_SG = \text{Rden_SG} \cdot SG$	0.798
97	$R0_Liver = \text{Rden_Liver} \cdot \text{Liver}$	2.5403
98	$\text{lambdaRel_TumorRest} = (\text{lambdaRel_Tumor1} + \text{lambdaRel_Tumor2}) / 2$	0.00015
99	$\text{lambdaIntern_SG} = \text{lambdaIntern_Normal}$	0.001
100	$\text{lambdaIntern_Liver} = \text{lambdaIntern_Tumor1}$	0.001
101	$\text{lambdaIntern_Spleen} = \text{lambdaIntern_Tumor1}$	0.001
102	$\text{lambdaRel_Liver} = \text{lambdaRel_Kidney}$	0.00029
103	$\text{lambdaRel_Spleen} = \text{lambdaRel_Kidney}$	0.00029
104	$\text{lambdaIntern_Prostate} = \text{lambdaIntern_Normal}$	0.001
105	$\text{lambdaIntern_GI} = \text{lambdaIntern_Normal}$	0.001
106	$\text{lambdaRel_Prostate} = \text{lambdaRel_Normal}$	0.00029
107	$\text{lambdaRel_GI} = \text{lambdaRel_Normal}$	0.00029
108	$\text{lambdaRel_Normal} = \text{lambdaRel_Kidney}$	0.00029
109	$\text{lambdaIntern_Normal} = \text{lambdaIntern_Tumor1}$	0.001
110	$\text{Rden_Spleen} = 0.02 \cdot \text{Rden_Prostate}$	0.532
111	$\text{Rden_Liver} = 0.05 \cdot \text{Rden_Prostate}$	1.33
112	$\text{Rden_Prostate} = 0.1 \cdot \text{Rden_TumorRest}$	26.6
113	$\text{Rden_GI} = 0.06 \cdot \text{Rden_Prostate}$	1.596
114	$F_Lungs = F$	3.9262
115	$GFR = \text{TER_Kidney} / 3 \cdot 201 / 151$	0.088742
116	$F = V_p \cdot 1.23 / dMin$	3.9262
117	$V_p = 2.8 \cdot (1 - \text{hematocrit}) \cdot \text{bodySurfaceArea} \cdot \text{dLiter} / dMeter^2$	3.192
118	$kPS_Liver = kPS_Muscle \cdot 100$	2
119	$kPS_Spleen = kPS_Liver$	2
120	$kPS_Lungs = kPS_Muscle \cdot 100$	2
121	$kPS_SG = kPS_Muscle \cdot 100$	2
122	$kPS_GI = kPS_Muscle$	0.02
123	$kPS_Skin = kPS_Muscle$	0.02
124	$kPS_Adipose = kPS_Muscle$	0.02
125	$kPS_RedMarrow = kPS_Liver$	2
126	$kPS_Heart = kPS_Muscle$	0.02
127	$kPS_Bone = kPS_Muscle$	0.02
128	$kPS_Rest = kPS_Muscle$	0.02
129	$f_Prostate = 0.18 \cdot (1 - \text{hematocrit}) / dMin$	0.108
130	$\text{HotPerInjection} = \text{HotTotalAmount} / (\text{RepeatCount} + 1)$	20
131	$\text{ColdPerInjection} = \text{ColdTotalAmount} / (\text{RepeatCount} + 1)$	200
132	$\text{lambdaIntern_Kidney} = \text{lambdaIntern_Tumor1}$	0.001
133	$kPS_Prostate = 0.1$	0.1
134	$\text{Tumor1} = \text{Tumor1Volume} \cdot \text{Tumor1VolumeCoeff}$	0.01

135	Albumin_0 = AlbuminDen*V_p	0
136	Art = 0.06*V_p + 0.045*V_p	0.33516
137	Vein = 0.18*V_p + 0.045*V_p	0.7182
138	Vein.Albumin = AlbuminDen * Vein	0
139	Art.Albumin = AlbuminDen * Art	0
140	Tumor1Vas.Albumin = AlbuminDen* Tumor1Vas	0
141	Tumor1Int.Albumin = AlbuminDen * Tumor1Int	0
142	Tumor2Vas.Albumin = AlbuminDen * Tumor2Vas	0
143	Tumor2Int.Albumin = AlbuminDen * Tumor2Int	0
144	TumorRestVas.Albumin = AlbuminDen * TumorRestVas	0
145	TumorRestInt.Albumin = AlbuminDen * TumorRestInt	0
146	KidneyVas.Albumin = AlbuminDen * KidneyVas	0
147	SpleenVas.Albumin = AlbuminDen * SpleenVas	0
148	ProstateVas.Albumin = AlbuminDen * ProstateVas	0
149	GIVas.Albumin = AlbuminDen * GIVas	0
150	SkinVas.Albumin = AlbuminDen * SkinVas	0
151	BrainVas.Albumin = AlbuminDen * BrainVas	0
152	LungsVas.Albumin = AlbuminDen * LungsVas	0
153	HeartVas.Albumin = AlbuminDen * HeartVas	0
154	BoneVas.Albumin = AlbuminDen * BoneVas	0
155	AdiposeVas.Albumin = AlbuminDen * AdiposeVas	0
156	RedMarrowVas.Albumin = AlbuminDen * RedMarrowVas	0
157	MuscleVas.Albumin = AlbuminDen * MuscleVas	0
158	RestVas.Albumin = AlbuminDen * RestVas	0
159	LiverVas.Albumin = AlbuminDen * LiverVas	0
160	SGVas.Albumin = AlbuminDen * SGVas	0
161	k_on_toAlb = k_off_toAlb / K_D_Alb	0
162	K_D_Alb = k_off_toAlb / k_on_toAlb	1
163	HotTotalAmount = injectionCoeff * HotTotalAmountOriginal	20
164	ColdTotalAmount = injectionCoeff * ColdTotalAmountOriginal	200

Repeated Assignments

	Repeated Assignments	Initial Value
1	Tumor2.R = R0_Tumor2 - Tumor2Bound.Hot - Tumor2Bound.Cold	6.46
2	Tumor1.R = R0_Tumor1 - Tumor1Bound.Hot - Tumor1Bound.Cold	0.57
3	Kidney.R = R0_Kidney-KidneyBound.Hot-KidneyBound.Cold	4.354
4	SG.R = R0_SG - SGBound.Hot - SGBound.Cold	0.798
5	TumorRest.R = R0_TumorRest - TumorRestBound.Hot - TumorRestBound.Cold	13
6	Spleen.R = R0_Spleen - SpleenBound.Hot - SpleenBound.Cold	0.097356
7	Liver.R = R0_Liver - LiverBound.Hot - LiverBound.Cold	2.5403
8	Prostate.R = R0_Prostate - ProstateBound.Hot - ProstateBound.Cold	0.59944
9	GI.R = R0_GI - GIBound.Hot - GIBound.Cold	2.6682
10	Data.DataKidney = KidneyVas.Hot + KidneyInt.Hot + KidneyBound.Hot + KidneyIntern.Hot	0

Reactions

	Reactions
1	Tumor2Vas.Hot -> Tumor2Vas.Cold $\lambda_{Phys} * Tumor2Vas.Hot$
2	Tumor2Vas.Hot + Tumor2Vas.Albumin <-> Tumor2Vas.AlbHot $k_{on_toAlb} * Tumor2Vas.Hot * Tumor2Vas.Albumin / Tumor2Vas - k_{off_toAlb} * Tumor2Vas.AlbHot$
3	Tumor2Vas.AlbHot -> Tumor2Vas.AlbCold $\lambda_{Phys} * Tumor2Vas.AlbHot$
4	Tumor2Vas.Cold + Tumor2Vas.Albumin <-> Tumor2Vas.AlbCold $k_{on_toAlb} * Tumor2Vas.Cold * Tumor2Vas.Albumin / Tumor2Vas - k_{off_toAlb} * Tumor2Vas.AlbCold$
5	Tumor2Vas.Hot <-> Tumor2Int.Hot $PS_Tumor2 / Tumor2Vas * Tumor2Vas.Hot - PS_Tumor2 / Tumor2Int * Tumor2Int.Hot$

6	Tumor2Vas.AlbHot -> Tumor2Int.AlbHot
	$PS_{Alb_Tumor2/Tumor2Vas} * Tumor2Vas.AlbHot$
7	Tumor2Vas.AlbCold -> Tumor2Int.AlbCold
	$PS_{Alb_Tumor2/Tumor2Vas} * Tumor2Vas.AlbCold$
8	Tumor2Vas.Cold -> Tumor2Int.Cold
	$PS_Tumor2/Tumor2Vas * Tumor2Vas.Cold - PS_Tumor2/Tumor2Int * Tumor2Int.Cold$
9	Tumor2Int.Hot <-> Tumor2Bound.Hot
	$k_{on}/Tumor2Int * Tumor2Int.Hot * Tumor2.R - k_{off} * Tumor2Bound.Hot$
10	Tumor2Int.Cold <-> Tumor2Bound.Cold
	$k_{on}/Tumor2Int * Tumor2Int.Cold * Tumor2.R - k_{off} * Tumor2Bound.Cold$
11	Tumor2Bound.Hot -> Tumor2Intern.Hot
	$lambda_{Intern_Tumor2} * Tumor2Bound.Hot$
12	Tumor2Bound.Cold -> Tumor2Intern.Cold
	$lambda_{Intern_Tumor2} * Tumor2Bound.Cold$
13	Art.Hot -> Tumor2Vas.Hot
	$F_Tumor2/Art * Art.Hot$
14	Art.AlbHot -> Tumor2Vas.AlbHot
	$F_Tumor2/Art * Art.AlbHot$
15	Art.AlbCold -> Tumor2Vas.AlbCold
	$F_Tumor2/Art * Art.AlbCold$
16	Art.Cold -> Tumor2Vas.Cold
	$F_Tumor2/Art * Art.Cold$
17	Tumor2Vas.Hot -> Vein.Hot
	$F_Tumor2/Tumor2Vas * Tumor2Vas.Hot$
18	Tumor2Vas.AlbHot -> Vein.AlbHot
	$F_Tumor2/Tumor2Vas * Tumor2Vas.AlbHot$
19	Tumor2Vas.AlbCold -> Vein.AlbCold
	$F_Tumor2/Tumor2Vas * Tumor2Vas.AlbCold$
20	Tumor2Vas.Cold -> Vein.Cold
	$F_Tumor2/Tumor2Vas * Tumor2Vas.Cold$
21	Tumor2Int.Hot -> Tumor2Int.Cold
	$lambda_{Phys} * Tumor2Int.Hot$
22	Tumor2Int.Hot + Tumor2Int.Albumin <-> Tumor2Int.AlbHot
	$k_{on_toAlb} * Tumor2Int.Hot * Tumor2Int.Albumin / Tumor2Int - k_{off_toAlb} * Tumor2Int.AlbHot$
23	Tumor2Int.AlbHot -> Tumor2Int.AlbCold
	$lambda_{Phys} * Tumor2Int.AlbHot$
24	Tumor2Int.Cold + Tumor2Int.Albumin <-> Tumor2Int.AlbCold
	$k_{on_toAlb} * Tumor2Int.Cold * Tumor2Int.Albumin / Tumor2Int - k_{off_toAlb} * Tumor2Int.AlbCold$
25	Tumor2Bound.Hot -> Tumor2Bound.Cold
	$lambda_{Phys} * Tumor2Bound.Hot$
26	Tumor2Intern.Hot -> Tumor2Intern.Cold
	$lambda_{Phys} * Tumor2Intern.Hot$
27	Tumor2Intern.Hot -> null
	$lambda_{Rel_Tumor2} * Tumor2Intern.Hot$
28	Tumor2Intern.Cold -> null
	$lambda_{Rel_Tumor2} * Tumor2Intern.Cold$
29	Art.Hot -> Art.Cold
	$lambda_{Phys} * Art.Hot$
30	Art.Hot + Art.Albumin <-> Art.AlbHot
	$k_{on_toAlb} * Art.Hot * Art.Albumin / Art - k_{off_toAlb} * Art.AlbHot$
31	Art.AlbHot -> Art.AlbCold
	$lambda_{Phys} * Art.AlbHot$
32	Art.Cold + Art.Albumin <-> Art.AlbCold
	$k_{on_toAlb} * Art.Cold * Art.Albumin / Art - k_{off_toAlb} * Art.AlbCold$
33	Vein.Hot -> Vein.Cold
	$lambda_{Phys} * Vein.Hot$
34	Vein.Hot + Vein.Albumin <-> Vein.AlbHot

	$k_{on_toAlb*Vein.Hot*Vein.Albumin/Vein-k_{off_toAlb*Vein.AlbHot}$
35	$Vein.AlbHot \rightarrow Vein.AlbCold$
	$\lambda_{Phys*Vein.AlbHot}$
36	$Vein.Cold + Vein.Albumin \leftrightarrow Vein.AlbCold$
	$k_{on_toAlb*Vein.Cold*Vein.Albumin/Vein-k_{off_toAlb*Vein.AlbCold}$
37	$Tumor1Vas.Hot \rightarrow Tumor1Vas.Cold$
	$\lambda_{Phys*Tumor1Vas.Hot}$
38	$Tumor1Vas.Hot + Tumor1Vas.Albumin \leftrightarrow Tumor1Vas.AlbHot$
	$k_{on_toAlb*Tumor1Vas.Hot*Tumor1Vas.Albumin/Tumor1Vas-k_{off_toAlb*Tumor1Vas.AlbHot}$
39	$Tumor1Vas.AlbHot \rightarrow Tumor1Vas.AlbCold$
	$\lambda_{Phys*Tumor1Vas.AlbHot}$
40	$Tumor1Vas.Cold + Tumor1Vas.Albumin \leftrightarrow Tumor1Vas.AlbCold$
	$k_{on_toAlb*Tumor1Vas.Cold*Tumor1Vas.Albumin/Tumor1Vas-k_{off_toAlb*Tumor1Vas.AlbCold}$
41	$Tumor1Vas.Hot \leftrightarrow Tumor1Int.Hot$
	$PS_Tumor1/Tumor1Vas*Tumor1Vas.Hot - PS_Tumor1/Tumor1Int*Tumor1Int.Hot$
42	$Tumor1Vas.AlbHot \leftrightarrow Tumor1Int.AlbHot$
	$PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.AlbHot - PSAlb_Tumor1/Tumor1Int*Tumor1Int.AlbHot$
43	$Tumor1Vas.AlbCold \rightarrow Tumor1Int.AlbCold$
	$PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.AlbCold - PSAlb_Tumor1/Tumor1Int * Tumor1Int.AlbCold$
44	$Tumor1Vas.Cold \leftrightarrow Tumor1Int.Cold$
	$PS_Tumor1/Tumor1Vas*Tumor1Vas.Cold - PS_Tumor1/Tumor1Int*Tumor1Int.Cold$
45	$Tumor1Int.Hot \leftrightarrow Tumor1Bound.Hot$
	$k_{on/Tumor1Int*Tumor1Int.Hot*Tumor1.R} - k_{off*Tumor1Bound.Hot}$
46	$Tumor1Int.Cold \leftrightarrow Tumor1Bound.Cold$
	$k_{on/Tumor1Int*Tumor1.R*Tumor1Int.Cold} - k_{off*Tumor1Bound.Cold}$
47	$Tumor1Bound.Hot \rightarrow Tumor1Intern.Hot$
	$\lambda_{bdalIntern_Tumor1*Tumor1Bound.Hot}$
48	$Tumor1Bound.Cold \rightarrow Tumor1Intern.Cold$
	$\lambda_{bdalIntern_Tumor1*Tumor1Bound.Cold}$
49	$Art.Hot \rightarrow Tumor1Vas.Hot$
	$F_Tumor1/Art*Art.Hot$
50	$Art.AlbHot \rightarrow Tumor1Vas.AlbHot$
	$F_Tumor1/Art*Art.AlbHot$
51	$Art.AlbCold \rightarrow Tumor1Vas.AlbCold$
	$F_Tumor1/Art*Art.AlbCold$
52	$Art.Cold \rightarrow Tumor1Vas.Cold$
	$F_Tumor1/Art*Art.Cold$
53	$Tumor1Vas.Hot \rightarrow Vein.Hot$
	$F_Tumor1/Tumor1Vas*Tumor1Vas.Hot$
54	$Tumor1Vas.AlbHot \rightarrow Vein.AlbHot$
	$F_Tumor1/Tumor1Vas*Tumor1Vas.AlbHot$
55	$Tumor1Vas.AlbCold \rightarrow Vein.AlbCold$
	$F_Tumor1/Tumor1Vas*Tumor1Vas.AlbCold$
56	$Tumor1Vas.Cold \rightarrow Vein.Cold$
	$F_Tumor1/Tumor1Vas*Tumor1Vas.Cold$
57	$Tumor1Int.Hot \rightarrow Tumor1Int.Cold$
	$\lambda_{Phys*Tumor1Int.Hot}$
58	$Tumor1Int.Hot + Tumor1Int.Albumin \rightarrow Tumor1Int.AlbHot$
	$k_{on_toAlb*Tumor1Int.Hot*Tumor1Int.Albumin/Tumor1Int-k_{off_toAlb*Tumor1Int.AlbHot}$
59	$Tumor1Int.AlbHot \rightarrow Tumor1Int.AlbCold$
	$\lambda_{Phys*Tumor1Int.AlbHot}$
60	$Tumor1Int.Cold + Tumor1Int.Albumin \leftrightarrow Tumor1Int.AlbCold$
	$k_{on_toAlb*Tumor1Int.Cold*Tumor1Int.Albumin/Tumor1Int-k_{off_toAlb*Tumor1Int.AlbCold}$
61	$Tumor1Bound.Hot \rightarrow Tumor1Bound.Cold$
	$\lambda_{Phys*Tumor1Bound.Hot}$
62	$Tumor1Intern.Hot \rightarrow Tumor1Intern.Cold$
	$\lambda_{Phys*Tumor1Intern.Hot}$

63	Tumor1Intern.Hot -> null <i>lambdaRel_Tumor1*Tumor1Intern.Hot</i>
64	Tumor1Intern.Cold -> null <i>lambdaRel_Tumor1*Tumor1Intern.Cold</i>
65	KidneyVas.Hot -> KidneyVas.Cold <i>lambdaPhys*KidneyVas.Hot</i>
66	KidneyVas.Hot + KidneyVas.Albumin <-> KidneyVas.AlbHot <i>k_on_toAlb*KidneyVas.Hot*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbHot</i>
67	KidneyVas.AlbHot -> KidneyVas.AlbCold <i>lambdaPhys*KidneyVas.AlbHot</i>
68	KidneyVas.Cold + KidneyVas.Albumin <-> KidneyVas.AlbCold <i>k_on_toAlb*KidneyVas.Cold*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbCold</i>
69	KidneyInt.Hot <-> KidneyBound.Hot <i>k_on/KidneyInt*KidneyInt.Hot*Kidney.R - k_off*KidneyBound.Hot</i>
70	KidneyInt.Cold <-> KidneyBound.Cold <i>k_on/KidneyInt*KidneyInt.Cold*Kidney.R - k_off*KidneyBound.Cold</i>
71	KidneyBound.Hot -> KidneyIntern.Hot <i>lambdaIntern_Kidney*KidneyBound.Hot</i>
72	KidneyBound.Cold -> KidneyIntern.Cold <i>lambdaIntern_Kidney*KidneyBound.Cold</i>
73	Art.Hot -> KidneyVas.Hot <i>F_Kidney/Art*Art.Hot</i>
74	Art.AlbHot -> KidneyVas.AlbHot <i>F_Kidney/Art*Art.AlbHot</i>
75	Art.AlbCold -> KidneyVas.AlbCold <i>F_Kidney/Art*Art.AlbCold</i>
76	Art.Cold -> KidneyVas.Cold <i>F_Kidney/Art*Art.Cold</i>
77	KidneyVas.Hot -> Vein.Hot <i>F_Kidney/KidneyVas*KidneyVas.Hot</i>
78	KidneyVas.AlbHot -> Vein.AlbHot <i>F_Kidney/KidneyVas*KidneyVas.AlbHot</i>
79	KidneyVas.AlbCold -> Vein.AlbCold <i>F_Kidney/KidneyVas*KidneyVas.AlbCold</i>
80	KidneyVas.Cold -> Vein.Cold <i>F_Kidney/KidneyVas*KidneyVas.Cold</i>
81	KidneyInt.Hot -> KidneyInt.Cold <i>lambdaPhys*KidneyInt.Hot</i>
82	KidneyBound.Hot -> KidneyBound.Cold <i>lambdaPhys*KidneyBound.Hot</i>
83	KidneyIntern.Hot -> KidneyIntern.Cold <i>lambdaPhys*KidneyIntern.Hot</i>
84	KidneyIntern.Hot -> null <i>lambdaRel_Kidney*KidneyIntern.Hot</i>
85	KidneyIntern.Cold -> null <i>lambdaRel_Kidney*KidneyIntern.Cold</i>
86	HeartVas.Hot -> HeartVas.Cold <i>lambdaPhys*HeartVas.Hot</i>
87	HeartVas.Hot + HeartVas.Albumin <-> HeartVas.AlbHot <i>k_on_toAlb*HeartVas.Hot*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbHot</i>
88	HeartVas.AlbHot -> HeartVas.AlbCold <i>lambdaPhys*HeartVas.AlbHot</i>
89	HeartVas.Cold + HeartVas.Albumin <-> HeartVas.AlbCold <i>k_on_toAlb*HeartVas.Cold*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbCold</i>
90	HeartVas.Hot <-> HeartInt.Hot <i>PS_Heart/HeartVas*HeartVas.Hot - PS_Heart/HeartInt*HeartInt.Hot</i>

91	HeartVas.Cold <-> HeartInt.Cold
	$PS_Heart/HeartVas*HeartVas.Cold - PS_Heart/HeartInt*HeartInt.Cold$
92	Art.Hot -> HeartVas.Hot
	$F_Heart/Art*Art.Hot$
93	Art.AlbHot -> HeartVas.AlbHot
	$F_Heart/Art*Art.AlbHot$
94	Art.AlbCold -> HeartVas.AlbCold
	$F_Heart/Art*Art.AlbCold$
95	Art.Cold -> HeartVas.Cold
	$F_Heart/Art*Art.Cold$
96	HeartVas.Hot -> Vein.Hot
	$F_Heart/HeartVas*HeartVas.Hot$
97	HeartVas.AlbHot -> Vein.AlbHot
	$F_Heart/HeartVas*HeartVas.AlbHot$
98	HeartVas.AlbCold -> Vein.AlbCold
	$F_Heart/HeartVas*HeartVas.AlbCold$
99	HeartVas.Cold -> Vein.Cold
	$F_Heart/HeartVas*HeartVas.Cold$
100	HeartInt.Hot -> HeartInt.Cold
	$lambdaPhys*HeartInt.Hot$
101	SGVas.Hot -> SGVas.Cold
	$lambdaPhys*SGVas.Hot$
102	SGVas.Hot + SGVas.Albumin <-> SGVas.AlbHot
	$k_on_toAlb*SGVas.Hot*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbHot$
103	SGVas.AlbHot -> SGVas.AlbCold
	$lambdaPhys*SGVas.AlbHot$
104	SGVas.Cold + SGVas.Albumin <-> SGVas.AlbCold
	$k_on_toAlb*SGVas.Cold*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbCold$
105	SGVas.Hot <-> SGInt.Hot
	$PS_SG/SGVas*SGVas.Hot - PS_SG/SGInt*SGInt.Hot$
106	SGVas.Cold <-> SGInt.Cold
	$PS_SG/SGVas*SGVas.Cold - PS_SG/SGInt*SGInt.Cold$
107	SGInt.Hot <-> SGBound.Hot
	$k_on/SGInt*SGInt.Hot*SG.R - k_off*SGBound.Hot$
108	SGInt.Cold <-> SGBound.Cold
	$k_on/SGInt*SGInt.Cold*SG.R - k_off*SGBound.Cold$
109	SGBound.Hot -> SGIntern.Hot
	$lambdaIntern_SG*SGBound.Hot$
110	SGBound.Cold -> SGIntern.Cold
	$lambdaIntern_SG*SGBound.Cold$
111	Art.Hot -> SGVas.Hot
	$F_SG/Art*Art.Hot$
112	Art.AlbHot -> SGVas.AlbHot
	$F_SG/Art*Art.AlbHot$
113	Art.AlbCold -> SGVas.AlbCold
	$F_SG/Art*Art.AlbCold$
114	Art.Cold -> SGVas.Cold
	$F_SG/Art*Art.Cold$
115	SGVas.Hot -> Vein.Hot
	$F_SG/SGVas*SGVas.Hot$
116	SGVas.AlbHot -> Vein.AlbHot
	$F_SG/SGVas*SGVas.AlbHot$
117	SGVas.AlbCold -> Vein.AlbCold
	$F_SG/SGVas*SGVas.AlbCold$
118	SGVas.Cold -> Vein.Cold
	$F_SG/SGVas*SGVas.Cold$
119	SGInt.Hot -> SGInt.Cold

	$\lambda Phys*SGInt.Hot$
120	SGBound.Hot -> SGBound.Cold $\lambda Phys*SGBound.Hot$
121	SGIntern.Hot -> SGIntern.Cold $\lambda Phys*SGIntern.Hot$
122	SGIntern.Hot -> null $\lambda Rel_SG*SGIntern.Hot$
123	SGIntern.Cold -> null $\lambda Rel_SG*SGIntern.Cold$
124	BoneVas.Hot -> BoneVas.Cold $\lambda Phys*BoneVas.Hot$
125	BoneVas.Hot + BoneVas.Albumin <-> BoneVas.AlbHot $k_{on_toAlb}*BoneVas.Hot*BoneVas.Albumin/BoneVas-k_{off_toAlb}*BoneVas.AlbHot$
126	BoneVas.AlbHot -> BoneVas.AlbCold $\lambda Phys*BoneVas.AlbHot$
127	BoneVas.Cold + BoneVas.Albumin <-> BoneVas.AlbCold $k_{on_toAlb}*BoneVas.Cold*BoneVas.Albumin/BoneVas-k_{off_toAlb}*BoneVas.AlbCold$
128	BoneVas.Hot <-> BoneInt.Hot $PS_Bone/BoneVas*BoneVas.Hot-PS_Bone/BoneInt*BoneInt.Hot$
129	BoneVas.Cold <-> BoneInt.Cold $PS_Bone/BoneVas*BoneVas.Cold - PS_Bone/BoneInt*BoneInt.Cold$
130	Art.Hot -> BoneVas.Hot $F_Bone/Art*Art.Hot$
131	Art.AlbHot -> BoneVas.AlbHot $F_Bone/Art*Art.AlbHot$
132	Art.AlbCold -> BoneVas.AlbCold $F_Bone/Art*Art.AlbCold$
133	Art.Cold -> BoneVas.Cold $F_Bone/Art*Art.Cold$
134	BoneVas.Hot -> Vein.Hot $F_Bone/BoneVas*BoneVas.Hot$
135	BoneVas.AlbHot -> Vein.AlbHot $F_Bone/BoneVas*BoneVas.AlbHot$
136	BoneVas.AlbCold -> Vein.AlbCold $F_Bone/BoneVas*BoneVas.AlbCold$
137	BoneVas.Cold -> Vein.Cold $F_Bone/BoneVas*BoneVas.Cold$
138	BoneInt.Hot -> BoneInt.Cold $\lambda Phys*BoneInt.Hot$
139	TumorRestVas.Hot -> TumorRestVas.Cold $\lambda Phys*TumorRestVas.Hot$
140	TumorRestVas.Hot + TumorRestVas.Albumin <-> TumorRestVas.AlbHot $k_{on_toAlb}*TumorRestVas.Hot*TumorRestVas.Albumin/TumorRestVas-k_{off_toAlb}*TumorRestVas.AlbHot$
141	TumorRestVas.AlbHot -> TumorRestVas.AlbCold $\lambda Phys*TumorRestVas.AlbHot$
142	TumorRestVas.Cold + TumorRestVas.Albumin <-> TumorRestVas.AlbCold $k_{on_toAlb}*TumorRestVas.Cold*TumorRestVas.Albumin/TumorRestVas-k_{off_toAlb}*TumorRestVas.AlbCold$
143	TumorRestVas.Hot <-> TumorRestInt.Hot $PS_TumorRest/TumorRestVas*TumorRestVas.Hot - PS_TumorRest/TumorRestInt*TumorRestInt.Hot$
144	TumorRestVas.AlbHot <-> TumorRestInt.AlbHot $PSAlb_TumorRest/TumorRestVas*TumorRestVas.AlbHot - PSAlb_TumorRest/TumorRestInt*TumorRestInt.AlbHot$
145	TumorRestVas.AlbCold <-> TumorRestInt.AlbCold $PSAlb_TumorRest/TumorRestVas*TumorRestVas.AlbCold - PSAlb_TumorRest/TumorRestInt*TumorRestInt.AlbCold$
146	TumorRestVas.Cold <-> TumorRestInt.Cold $PS_TumorRest/TumorRestVas * TumorRestVas.Cold - PS_TumorRest/TumorRestInt*TumorRestInt.Cold$
147	TumorRestInt.Hot <-> TumorRestBound.Hot

	$k_{on}/TumorRestInt * TumorRestInt.Hot * TumorRest.R - k_{off} * TumorRestBound.Hot$
148	TumorRestInt.Cold <-> TumorRestBound.Cold
	$k_{on}/TumorRestInt * TumorRestInt.Cold * TumorRest.R - k_{off} * TumorRestBound.Cold$
149	TumorRestBound.Hot -> TumorRestIntern.Hot
	$\lambda_{Intern_TumorRest} * TumorRestBound.Hot$
150	TumorRestBound.Cold -> TumorRestIntern.Cold
	$\lambda_{Intern_TumorRest} * TumorRestBound.Cold$
151	Art.Hot -> TumorRestVas.Hot
	$F_TumorRest/Art * Art.Hot$
152	Art.AlbHot -> TumorRestVas.AlbHot
	$F_TumorRest/Art * Art.AlbHot$
153	Art.AlbCold <-> TumorRestVas.AlbCold
	$F_TumorRest/Art * Art.AlbCold$
154	Art.Cold <-> TumorRestVas.Cold
	$F_TumorRest/Art * Art.Cold$
155	TumorRestVas.Hot -> Vein.Hot
	$F_TumorRest/TumorRestVas * TumorRestVas.Hot$
156	TumorRestVas.AlbHot -> Vein.AlbHot
	$F_TumorRest/TumorRestVas * TumorRestVas.AlbHot$
157	TumorRestVas.AlbCold -> Vein.AlbCold
	$F_TumorRest/TumorRestVas * TumorRestVas.AlbCold$
158	TumorRestVas.Cold -> Vein.Cold
	$F_TumorRest/TumorRestVas * TumorRestVas.Cold$
159	TumorRestInt.Hot -> TumorRestInt.Cold
	$\lambda_{Phys} * TumorRestInt.Hot$
160	TumorRestInt.Hot + TumorRestInt.Albumin -> TumorRestInt.AlbHot
	$k_{on_toAlb} * TumorRestInt.Hot * TumorRestInt.Albumin / TumorRestInt - k_{off_toAlb} * TumorRestInt.AlbHot$
161	TumorRestInt.AlbHot -> TumorRestInt.AlbCold
	$\lambda_{Phys} * TumorRestInt.AlbHot$
162	TumorRestInt.Cold + TumorRestInt.Albumin <-> TumorRestInt.AlbCold
	$k_{on_toAlb} * TumorRestInt.Cold * TumorRestInt.Albumin / TumorRestInt - k_{off_toAlb} * TumorRestInt.AlbCold$
163	TumorRestBound.Hot -> TumorRestBound.Cold
	$\lambda_{Phys} * TumorRestBound.Hot$
164	TumorRestIntern.Hot -> TumorRestIntern.Cold
	$\lambda_{Phys} * TumorRestIntern.Hot$
165	TumorRestIntern.Hot -> null
	$\lambda_{Rel_TumorRest} * TumorRestIntern.Hot$
166	TumorRestIntern.Cold -> null
	$\lambda_{Rel_TumorRest} * TumorRestIntern.Cold$
167	SpleenVas.Hot -> SpleenVas.Cold
	$\lambda_{Phys} * SpleenVas.Hot$
168	SpleenVas.Hot + SpleenVas.Albumin <-> SpleenVas.AlbHot
	$k_{on_toAlb} * SpleenVas.Hot * SpleenVas.Albumin / SpleenVas - k_{off_toAlb} * SpleenVas.AlbHot$
169	SpleenVas.AlbHot -> SpleenVas.AlbCold
	$\lambda_{Phys} * SpleenVas.AlbHot$
170	SpleenVas.Cold + SpleenVas.Albumin <-> SpleenVas.AlbCold
	$k_{on_toAlb} * SpleenVas.Cold * SpleenVas.Albumin / SpleenVas - k_{off_toAlb} * SpleenVas.AlbCold$
171	SpleenVas.Hot <-> SpleenInt.Hot
	$PS_Spleen / SpleenVas * SpleenVas.Hot - PS_Spleen / SpleenInt * SpleenInt.Hot$
172	SpleenVas.Cold <-> SpleenInt.Cold
	$PS_Spleen / SpleenVas * SpleenVas.Cold - PS_Spleen / SpleenInt * SpleenInt.Cold$
173	SpleenInt.Hot <-> SpleenBound.Hot
	$k_{on}/SpleenInt * SpleenInt.Hot * Spleen.R - k_{off} * SpleenBound.Hot$
174	SpleenInt.Cold <-> SpleenBound.Cold
	$k_{on}/SpleenInt * SpleenInt.Cold * Spleen.R - k_{off} * SpleenBound.Cold$
175	SpleenBound.Hot -> SpleenIntern.Hot

	$\lambda_{Intern_Spleen} * SpleenBound.Hot$
176	SpleenBound.Cold -> SpleenIntern.Cold $\lambda_{Intern_Spleen} * SpleenBound.Cold$
177	Art.Hot -> SpleenVas.Hot $F_{Spleen/Art} * Art.Hot$
178	Art.AlbHot -> SpleenVas.AlbHot $F_{Spleen/Art} * Art.AlbHot$
179	Art.AlbCold -> SpleenVas.AlbCold $F_{Spleen/Art} * Art.AlbCold$
180	Art.Cold -> SpleenVas.Cold $F_{Spleen/Art} * Art.Cold$
181	SpleenInt.Hot -> SpleenInt.Cold $\lambda_{Phys} * SpleenInt.Hot$
182	SpleenBound.Hot -> SpleenBound.Cold $\lambda_{Phys} * SpleenBound.Hot$
183	SpleenIntern.Hot -> SpleenIntern.Cold $\lambda_{Phys} * SpleenIntern.Hot$
184	SpleenIntern.Hot -> null $\lambda_{Rel_Spleen} * SpleenIntern.Hot$
185	SpleenIntern.Cold -> null $\lambda_{Rel_Spleen} * SpleenIntern.Cold$
186	LiverVas.Hot -> LiverVas.Cold $\lambda_{Phys} * LiverVas.Hot$
187	LiverVas.Hot + LiverVas.Albumin <-> LiverVas.AlbHot $k_{on_toAlb} * LiverVas.Hot * LiverVas.Albumin / LiverVas - k_{off_toAlb} * LiverVas.AlbHot$
188	LiverVas.AlbHot -> LiverVas.AlbCold $\lambda_{Phys} * LiverVas.AlbHot$
189	LiverVas.Cold + LiverVas.Albumin <-> LiverVas.AlbCold $k_{on_toAlb} * LiverVas.Cold * LiverVas.Albumin / LiverVas - k_{off_toAlb} * LiverVas.AlbCold$
190	LiverVas.Hot <-> LiverInt.Hot $PS_{Liver} / LiverVas * LiverVas.Hot - PS_{Liver} / LiverInt * LiverInt.Hot$
191	LiverVas.Cold <-> LiverInt.Cold $PS_{Liver} / LiverVas * LiverVas.Cold - PS_{Liver} / LiverInt * LiverInt.Cold$
192	LiverInt.Hot <-> LiverBound.Hot $k_{on} / LiverInt * LiverInt.Hot * Liver.R - k_{off} * LiverBound.Hot$
193	LiverInt.Cold <-> LiverBound.Cold $k_{on} / LiverInt * LiverInt.Cold * Liver.R - k_{off} * LiverBound.Cold$
194	LiverBound.Hot -> LiverIntern.Hot $\lambda_{Intern_Liver} * LiverBound.Hot$
195	LiverBound.Cold -> LiverIntern.Cold $\lambda_{Intern_Liver} * LiverBound.Cold$
196	Art.Hot -> LiverVas.Hot $F_{Liver/Art} * Art.Hot$
197	Art.AlbHot -> LiverVas.AlbHot $F_{Liver/Art} * Art.AlbHot$
198	Art.AlbCold -> LiverVas.AlbCold $F_{Liver/Art} * Art.AlbCold$
199	Art.Cold -> LiverVas.Cold $F_{Liver/Art} * Art.Cold$
200	LiverVas.Hot -> Vein.Hot $F_{Liver/LiverVas} * LiverVas.Hot$
201	LiverVas.AlbHot -> Vein.AlbHot $F_{Liver/LiverVas} * LiverVas.AlbHot$
202	LiverVas.AlbCold -> Vein.AlbCold $F_{Liver/LiverVas} * LiverVas.AlbCold$
203	LiverVas.Cold -> Vein.Cold $F_{Liver/LiverVas} * LiverVas.Cold$

204	LiverInt.Hot -> LiverInt.Cold
	$\lambda_{Phys} \text{LiverInt.Hot}$
205	LiverBound.Hot -> LiverBound.Cold
	$\lambda_{Phys} \text{LiverBound.Hot}$
206	LiverIntern.Hot -> LiverIntern.Cold
	$\lambda_{Phys} \text{LiverIntern.Hot}$
207	LiverIntern.Hot -> null
	$\lambda_{Rel_Liver} \text{LiverIntern.Hot}$
208	LiverIntern.Cold -> null
	$\lambda_{Rel_Liver} \text{LiverIntern.Cold}$
209	ProstateVas.Hot -> ProstateVas.Cold
	$\lambda_{Phys} \text{ProstateVas.Hot}$
210	ProstateVas.Hot + ProstateVas.Albumin <-> ProstateVas.AlbHot
	$k_{on_toAlb} \text{ProstateVas.Hot} * \text{ProstateVas.Albumin} / \text{ProstateVas-k}_{off_toAlb} \text{ProstateVas.AlbHot}$
211	ProstateVas.AlbHot -> ProstateVas.AlbCold
	$\lambda_{Phys} \text{ProstateVas.AlbHot}$
212	ProstateVas.Cold + ProstateVas.Albumin <-> ProstateVas.AlbCold
	$k_{on_toAlb} \text{ProstateVas.Cold} * \text{ProstateVas.Albumin} / \text{ProstateVas-k}_{off_toAlb} \text{ProstateVas.AlbCold}$
213	ProstateVas.Hot <-> ProstateInt.Hot
	$PS_Prostate / \text{ProstateVas} * \text{ProstateVas.Hot} - PS_Prostate / \text{ProstateInt} * \text{ProstateInt.Hot}$
214	ProstateVas.Cold <-> ProstateInt.Cold
	$PS_Prostate / \text{ProstateVas} * \text{ProstateVas.Cold} - PS_Prostate / \text{ProstateInt} * \text{ProstateInt.Cold}$
215	ProstateInt.Hot <-> ProstateBound.Hot
	$k_{on} / \text{ProstateInt} * \text{ProstateInt.Hot} * \text{Prostate.R-k}_{off} \text{ProstateBound.Hot}$
216	ProstateInt.Cold <-> ProstateBound.Cold
	$k_{on} / \text{ProstateInt} * \text{ProstateInt.Cold} * \text{Prostate.R-k}_{off} \text{ProstateBound.Cold}$
217	ProstateBound.Hot -> ProstateIntern.Hot
	$\lambda_{Intern_Prostate} \text{ProstateBound.Hot}$
218	ProstateBound.Cold -> ProstateIntern.Cold
	$\lambda_{Intern_Prostate} \text{ProstateBound.Cold}$
219	Art.Hot -> ProstateVas.Hot
	$F_Prostate / \text{Art} * \text{Art.Hot}$
220	Art.AlbHot -> ProstateVas.AlbHot
	$F_Prostate / \text{Art} * \text{Art.AlbHot}$
221	Art.AlbCold -> ProstateVas.AlbCold
	$F_Prostate / \text{Art} * \text{Art.AlbCold}$
222	Art.Cold -> ProstateVas.Cold
	$F_Prostate / \text{Art} * \text{Art.Cold}$
223	ProstateVas.Hot -> Vein.Hot
	$F_Prostate / \text{ProstateVas} * \text{ProstateVas.Hot}$
224	ProstateVas.AlbHot -> Vein.AlbHot
	$F_Prostate / \text{ProstateVas} * \text{ProstateVas.AlbHot}$
225	ProstateVas.AlbCold -> Vein.AlbCold
	$F_Prostate / \text{ProstateVas} * \text{ProstateVas.AlbCold}$
226	ProstateVas.Cold -> Vein.Cold
	$F_Prostate / \text{ProstateVas} * \text{ProstateVas.Cold}$
227	ProstateInt.Hot -> ProstateInt.Cold
	$\lambda_{Phys} \text{ProstateInt.Hot}$
228	ProstateBound.Hot -> ProstateBound.Cold
	$\lambda_{Phys} \text{ProstateBound.Hot}$
229	ProstateIntern.Hot -> ProstateIntern.Cold
	$\lambda_{Phys} \text{ProstateIntern.Hot}$
230	ProstateIntern.Hot -> null
	$\lambda_{Rel_Prostate} \text{ProstateIntern.Hot}$
231	ProstateIntern.Cold -> null
	$\lambda_{Rel_Prostate} \text{ProstateIntern.Cold}$

232	GIVas.Hot -> GIVas.Cold
	$\lambda_{Phys} * GIVas.Hot$
233	GIVas.Hot + GIVas.Albumin <-> GIVas.AlbHot
	$k_{on_toAlb} * GIVas.Hot * GIVas.Albumin / GIVas-k_{off_toAlb} * GIVas.AlbHot$
234	GIVas.AlbHot -> GIVas.AlbCold
	$\lambda_{Phys} * GIVas.AlbHot$
235	GIVas.Cold + GIVas.Albumin <-> GIVas.AlbCold
	$k_{on_toAlb} * GIVas.Cold * GIVas.Albumin / GIVas-k_{off_toAlb} * GIVas.AlbCold$
236	GIVas.Hot <-> GIIInt.Hot
	$PS_GI / GIVas * GIVas.Hot - PS_GI / GIIInt * GIIInt.Hot$
237	GIVas.Cold <-> GIIInt.Cold
	$PS_GI / GIVas * GIVas.Cold - PS_GI / GIIInt * GIIInt.Cold$
238	GIIInt.Hot <-> GIBound.Hot
	$k_{on} / GIIInt * GIIInt.Hot * GI.R - k_{off} * GIBound.Hot$
239	GIIInt.Cold <-> GIBound.Cold
	$k_{on} / GIIInt * GIIInt.Cold * GI.R - k_{off} * GIBound.Cold$
240	GIBound.Hot -> GIIIntern.Hot
	$\lambda_{Intern_GI} * GIBound.Hot$
241	GIBound.Cold -> GIIIntern.Cold
	$\lambda_{Intern_GI} * GIBound.Cold$
242	Art.Hot -> GIVas.Hot
	$F_GI / Art * Art.Hot$
243	Art.AlbHot -> GIVas.AlbHot
	$F_GI / Art * Art.AlbHot$
244	Art.AlbCold -> GIVas.AlbCold
	$F_GI / Art * Art.AlbCold$
245	Art.Cold -> GIVas.Cold
	$F_GI / Art * Art.Cold$
246	GIIInt.Hot -> GIIInt.Cold
	$\lambda_{Phys} * GIIInt.Hot$
247	GIBound.Hot -> GIBound.Cold
	$\lambda_{Phys} * GIBound.Hot$
248	GIIIntern.Hot -> GIIIntern.Cold
	$\lambda_{Phys} * GIIIntern.Hot$
249	GIIIntern.Hot -> null
	$\lambda_{Rel_GI} * GIIIntern.Hot$
250	GIIIntern.Cold -> null
	$\lambda_{Rel_GI} * GIIIntern.Cold$
251	RestVas.Hot -> RestVas.Cold
	$\lambda_{Phys} * RestVas.Hot$
252	RestVas.Hot + RestVas.Albumin <-> RestVas.AlbHot
	$k_{on_toAlb} * RestVas.Hot * RestVas.Albumin / RestVas-k_{off_toAlb} * RestVas.AlbHot$
253	RestVas.AlbHot -> RestVas.AlbCold
	$\lambda_{Phys} * RestVas.AlbHot$
254	RestVas.Cold + RestVas.Albumin <-> RestVas.AlbCold
	$k_{on_toAlb} * RestVas.Cold * RestVas.Albumin / RestVas-k_{off_toAlb} * RestVas.AlbCold$
255	RestVas.Hot <-> RestInt.Hot
	$PS_Rest / RestVas * RestVas.Hot - PS_Rest / RestInt * RestInt.Hot$
256	RestVas.Cold <-> RestInt.Cold
	$PS_Rest / RestVas * RestVas.Cold - PS_Rest / RestInt * RestInt.Cold$
257	Art.Hot -> RestVas.Hot
	$F_Rest / Art * Art.Hot$
258	Art.AlbHot -> RestVas.AlbHot
	$F_Rest / Art * Art.AlbHot$
259	Art.AlbCold -> RestVas.AlbCold
	$F_Rest / Art * Art.AlbCold$
260	Art.Cold -> RestVas.Cold

	<i>F_Rest/Art*Art.Cold</i>
261	RestVas.Hot -> Vein.Hot
	<i>F_Rest/RestVas*RestVas.Hot</i>
262	RestVas.AlbHot -> Vein.AlbHot
	<i>F_Rest/RestVas*RestVas.AlbHot</i>
263	RestVas.AlbCold -> Vein.AlbCold
	<i>F_Rest/RestVas*RestVas.AlbCold</i>
264	RestVas.Cold -> Vein.Cold
	<i>F_Rest/RestVas*RestVas.Cold</i>
265	RestInt.Hot -> RestInt.Cold
	<i>lambdaPhys*RestInt.Hot</i>
266	SkinVas.Hot -> SkinVas.Cold
	<i>lambdaPhys*SkinVas.Hot</i>
267	SkinVas.Hot + SkinVas.Albumin <-> SkinVas.AlbHot
	<i>k_on_toAlb*SkinVas.Hot*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbHot</i>
268	SkinVas.AlbHot -> SkinVas.AlbCold
	<i>lambdaPhys*SkinVas.AlbHot</i>
269	SkinVas.Cold + SkinVas.Albumin <-> SkinVas.AlbCold
	<i>k_on_toAlb*SkinVas.Cold*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbCold</i>
270	SkinVas.Hot <-> SkinInt.Hot
	<i>PS_Skin/SkinVas*SkinVas.Hot - PS_Skin/SkinVas*SkinInt.Hot</i>
271	SkinVas.Cold <-> SkinInt.Cold
	<i>PS_Skin/SkinVas*SkinVas.Cold - PS_Skin/SkinInt*SkinInt.Cold</i>
272	Art.Hot -> SkinVas.Hot
	<i>F_Skin/Art*Art.Hot</i>
273	Art.AlbHot -> SkinVas.AlbHot
	<i>F_Skin/Art*Art.AlbHot</i>
274	Art.AlbCold -> SkinVas.AlbCold
	<i>F_Skin/Art*Art.AlbCold</i>
275	Art.Cold -> SkinVas.Cold
	<i>F_Skin/Art*Art.Cold</i>
276	SkinVas.Hot -> Vein.Hot
	<i>F_Skin/SkinVas*SkinVas.Hot</i>
277	SkinVas.AlbHot -> Vein.AlbHot
	<i>F_Skin/SkinVas*SkinVas.AlbHot</i>
278	SkinVas.AlbCold -> Vein.AlbCold
	<i>F_Skin/SkinVas*SkinVas.AlbCold</i>
279	SkinVas.Cold -> Vein.Cold
	<i>F_Skin/SkinVas*SkinVas.Cold</i>
280	SkinInt.Hot -> SkinInt.Cold
	<i>lambdaPhys*SkinInt.Hot</i>
281	MuscleVas.Hot -> MuscleVas.Cold
	<i>lambdaPhys*MuscleVas.Hot</i>
282	MuscleVas.Hot + MuscleVas.Albumin <-> MuscleVas.AlbHot
	<i>k_on_toAlb*MuscleVas.Hot*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbHot</i>
283	MuscleVas.AlbHot -> MuscleVas.AlbCold
	<i>lambdaPhys*MuscleVas.AlbHot</i>
284	MuscleVas.Cold + MuscleVas.Albumin <-> MuscleVas.AlbCold
	<i>k_on_toAlb*MuscleVas.Cold*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbCold</i>
285	MuscleVas.Hot <-> MuscleInt.Hot
	<i>PS_Muscle/MuscleVas*MuscleVas.Hot - PS_Muscle/MuscleInt*MuscleInt.Hot</i>
286	MuscleVas.Cold <-> MuscleInt.Cold
	<i>PS_Muscle/MuscleVas*MuscleVas.Cold - PS_Muscle/MuscleInt*MuscleInt.Cold</i>
287	Art.Hot -> MuscleVas.Hot
	<i>F_Muscle/Art*Art.Hot</i>
288	Art.AlbHot -> MuscleVas.AlbHot

	<i>F_Muscle/Art*Art.AlbHot</i>
289	Art.AlbCold -> MuscleVas.AlbCold <i>F_Muscle/Art*Art.AlbCold</i>
290	Art.Cold -> MuscleVas.Cold <i>F_Muscle/Art*Art.Cold</i>
291	MuscleVas.Hot -> Vein.Hot <i>F_Muscle/MuscleVas*MuscleVas.Hot</i>
292	MuscleVas.AlbHot -> Vein.AlbHot <i>F_Muscle/MuscleVas*MuscleVas.AlbHot</i>
293	MuscleVas.AlbCold -> Vein.AlbCold <i>F_Muscle/MuscleVas*MuscleVas.AlbCold</i>
294	MuscleVas.Cold -> Vein.Cold <i>F_Muscle/MuscleVas*MuscleVas.Cold</i>
295	MuscleInt.Hot -> MuscleInt.Cold <i>lambdaPhys*MuscleInt.Hot</i>
296	BrainVas.Hot -> BrainVas.Cold <i>lambdaPhys*BrainVas.Hot</i>
297	BrainVas.Hot + BrainVas.Albumin <-> BrainVas.AlbHot <i>k_on_toAlb*BrainVas.Hot*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbHot</i>
298	BrainVas.AlbHot -> BrainVas.AlbCold <i>lambdaPhys*BrainVas.AlbHot</i>
299	BrainVas.Cold + BrainVas.Albumin <-> BrainVas.AlbCold <i>k_on_toAlb*BrainVas.Cold*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbCold</i>
300	BrainVas.Hot <-> BrainInt.Hot <i>PS_Brain/BrainVas*BrainVas.Hot-PS_Brain/BrainInt*BrainInt.Hot</i>
301	BrainVas.Cold <-> BrainInt.Cold <i>PS_Brain/BrainVas*BrainVas.Cold - PS_Brain/BrainInt*BrainInt.Cold</i>
302	Art.Hot -> BrainVas.Hot <i>F_Brain/Art*Art.Hot</i>
303	Art.AlbHot -> BrainVas.AlbHot <i>F_Brain/Art*Art.AlbHot</i>
304	Art.AlbCold -> BrainVas.AlbCold <i>F_Brain/Art*Art.AlbCold</i>
305	Art.Cold -> BrainVas.Cold <i>F_Brain/Art*Art.Cold</i>
306	BrainVas.Hot -> Vein.Hot <i>F_Brain/BrainVas*BrainVas.Hot</i>
307	BrainVas.AlbHot -> Vein.AlbHot <i>F_Brain/BrainVas*BrainVas.AlbHot</i>
308	BrainVas.AlbCold -> Vein.AlbCold <i>F_Brain/BrainVas*BrainVas.AlbCold</i>
309	BrainVas.Cold -> Vein.Cold <i>F_Brain/BrainVas*BrainVas.Cold</i>
310	BrainInt.Hot -> BrainInt.Cold <i>lambdaPhys*BrainInt.Hot</i>
311	RedMarrowVas.Hot -> RedMarrowVas.Cold <i>lambdaPhys*RedMarrowVas.Hot</i>
312	RedMarrowVas.Hot + RedMarrowVas.Albumin <-> RedMarrowVas.AlbHot <i>k_on_toAlb*RedMarrowVas.Hot*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbHot</i>
313	RedMarrowVas.AlbHot -> RedMarrowVas.AlbCold <i>lambdaPhys*RedMarrowVas.AlbHot</i>
314	RedMarrowVas.Cold + RedMarrowVas.Albumin <-> RedMarrowVas.AlbCold <i>k_on_toAlb*RedMarrowVas.Cold*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbCold</i>
315	RedMarrowVas.Hot <-> RedMarrowInt.Hot <i>PS_RedMarrow/RedMarrowVas*RedMarrowVas.Hot - PS_RedMarrow/RedMarrowInt*RedMarrowInt.Hot</i>
316	RedMarrowVas.Cold <-> RedMarrowInt.Cold <i>PS_RedMarrow/RedMarrowVas*RedMarrowVas.Cold - PS_RedMarrow/RedMarrowInt*RedMarrowInt.Cold</i>

317	Art.Hot -> RedMarrowVas.Hot
	$F_{RedMarrow/Art*Art.Hot}$
318	Art.AlbHot -> RedMarrowVas.AlbHot
	$F_{RedMarrow/Art*Art.AlbHot}$
319	Art.AlbCold -> RedMarrowVas.AlbCold
	$F_{RedMarrow/Art*Art.AlbCold}$
320	Art.Cold -> RedMarrowVas.Cold
	$F_{RedMarrow/Art*Art.Cold}$
321	RedMarrowVas.Hot -> Vein.Hot
	$F_{RedMarrow/RedMarrowVas*RedMarrowVas.Hot}$
322	RedMarrowVas.AlbHot -> Vein.AlbHot
	$F_{RedMarrow/RedMarrowVas*RedMarrowVas.AlbHot}$
323	RedMarrowVas.AlbCold -> Vein.AlbCold
	$F_{RedMarrow/RedMarrowVas*RedMarrowVas.AlbCold}$
324	RedMarrowVas.Cold -> Vein.Cold
	$F_{RedMarrow/RedMarrowVas*RedMarrowVas.Cold}$
325	RedMarrowInt.Hot -> RedMarrowInt.Cold
	$\lambda_{Phys*RedMarrowInt.Hot}$
326	LungsVas.Hot -> LungsVas.Cold
	$\lambda_{Phys*LungsVas.Hot}$
327	LungsVas.Hot + LungsVas.Albumin <-> LungsVas.AlbHot
	$k_{on_toAlb*LungsVas.Hot*LungsVas.Albumin/LungsVas-k_{off_toAlb*LungsVas.AlbHot}$
328	LungsVas.AlbHot -> LungsVas.AlbCold
	$\lambda_{Phys*LungsVas.AlbHot}$
329	LungsVas.Cold + LungsVas.Albumin <-> LungsVas.AlbCold
	$k_{on_toAlb*LungsVas.Cold*LungsVas.Albumin/LungsVas-k_{off_toAlb*LungsVas.AlbCold}$
330	LungsVas.Hot <-> LungsInt.Hot
	$PS_{Lungs/LungsVas*LungsVas.Hot-PS_{Lungs/LungsInt*LungsInt.Hot}$
331	LungsVas.Cold <-> LungsInt.Cold
	$PS_{Lungs/LungsVas*LungsVas.Cold-PS_{Lungs/LungsInt*LungsInt.Cold}$
332	LungsVas.Hot -> Art.Hot
	$F_{Lungs/LungsVas*LungsVas.Hot}$
333	LungsVas.AlbHot -> Art.AlbHot
	$F_{Lungs/LungsVas*LungsVas.AlbHot}$
334	LungsVas.AlbCold -> Art.AlbCold
	$F_{Lungs/LungsVas*LungsVas.AlbCold}$
335	LungsVas.Cold -> Art.Cold
	$F_{Lungs/LungsVas*LungsVas.Cold}$
336	Vein.Hot -> LungsVas.Hot
	$F_{Lungs/Vein*Vein.Hot}$
337	Vein.AlbHot -> LungsVas.AlbHot
	$F_{Lungs/Vein*Vein.AlbHot}$
338	Vein.AlbCold -> LungsVas.AlbCold
	$F_{Lungs/Vein*Vein.AlbCold}$
339	Vein.Cold -> LungsVas.Cold
	$F_{Lungs/Vein*Vein.Cold}$
340	LungsInt.Hot -> LungsInt.Cold
	$\lambda_{Phys*LungsInt.Hot}$
341	AdiposeVas.Hot -> AdiposeVas.Cold
	$\lambda_{Phys*AdiposeVas.Hot}$
342	AdiposeVas.Hot + AdiposeVas.Albumin <-> AdiposeVas.AlbHot
	$k_{on_toAlb*AdiposeVas.Hot*AdiposeVas.Albumin/AdiposeVas-k_{off_toAlb*AdiposeVas.AlbHot}$
343	AdiposeVas.AlbHot -> AdiposeVas.AlbCold
	$\lambda_{Phys*AdiposeVas.AlbHot}$
344	AdiposeVas.Cold + AdiposeVas.Albumin <-> AdiposeVas.AlbCold
	$k_{on_toAlb*AdiposeVas.Cold*AdiposeVas.Albumin/AdiposeVas-k_{off_toAlb*AdiposeVas.AlbCold}$

345	AdiposeVas.Hot <-> AdiposeInt.Hot
	$PS_Adipose/AdiposeVas*AdiposeVas.Hot - PS_Adipose/AdiposeInt*AdiposeInt.Hot$
346	AdiposeVas.Cold <-> AdiposeInt.Cold
	$PS_Adipose/AdiposeVas*AdiposeVas.Cold - PS_Adipose/AdiposeInt*AdiposeInt.Cold$
347	Art.Hot -> AdiposeVas.Hot
	$F_Adipose/Art*Art.Hot$
348	Art.AlbHot -> AdiposeVas.AlbHot
	$F_Adipose/Art*Art.AlbHot$
349	Art.AlbCold -> AdiposeVas.AlbCold
	$F_Adipose/Art*Art.AlbCold$
350	Art.Cold -> AdiposeVas.Cold
	$F_Adipose/Art*Art.Cold$
351	AdiposeVas.Hot -> Vein.Hot
	$F_Adipose/AdiposeVas*AdiposeVas.Hot$
352	AdiposeVas.AlbHot -> Vein.AlbHot
	$F_Adipose/AdiposeVas*AdiposeVas.AlbHot$
353	AdiposeVas.AlbCold -> Vein.AlbCold
	$F_Adipose/AdiposeVas*AdiposeVas.AlbCold$
354	AdiposeVas.Cold -> Vein.Cold
	$F_Adipose/AdiposeVas*AdiposeVas.Cold$
355	AdiposeInt.Hot -> AdiposeInt.Cold
	$lambdaPhys*AdiposeInt.Hot$
356	KidneyVas.Hot -> KidneyInt.Hot
	$GFR*phi/KidneyVas*KidneyVas.Hot$
357	KidneyVas.Cold -> KidneyInt.Cold
	$GFR*phi/KidneyVas*KidneyVas.Cold$
358	KidneyInt.Hot -> KidneyIntera.Hot
	$GFR*phi*(1-f_exc)/KidneyInt*KidneyInt.Hot$
359	KidneyInt.Cold -> KidneyIntera.Cold
	$GFR*phi*(1-f_exc)/KidneyInt*KidneyInt.Cold$
360	KidneyIntera.Hot -> KidneyVas.Hot
	$GFR*phi*(1-f_exc)/KidneyIntern*KidneyIntera.Hot$
361	KidneyIntera.Cold -> KidneyVas.Cold
	$GFR*phi*(1-f_exc)/KidneyIntern*KidneyIntera.Cold$
362	KidneyInt.Cold -> null
	$GFR*phi*f_exc/KidneyInt*KidneyInt.Cold$
363	KidneyInt.Hot -> null
	$GFR*phi*f_exc/KidneyInt*KidneyInt.Hot$
364	SpleenVas.Hot -> LiverVas.Hot
	$F_Spleen/SpleenVas*SpleenVas.Hot$
365	GIVas.Hot -> LiverVas.Hot
	$F_GI/GIVas*GIVas.Hot$
366	SpleenVas.AlbHot -> LiverVas.AlbHot
	$F_Spleen/SpleenVas*SpleenVas.AlbHot$
367	SpleenVas.AlbCold -> LiverVas.AlbCold
	$F_Spleen/SpleenVas*SpleenVas.AlbCold$
368	SpleenVas.Cold -> LiverVas.Cold
	$F_Spleen/SpleenVas * SpleenVas.Cold$
369	GIVas.AlbHot -> LiverVas.AlbHot
	$F_GI/GIVas*GIVas.AlbHot$
370	GIVas.AlbCold -> LiverVas.AlbCold
	$F_GI/GIVas*GIVas.AlbCold$
371	GIVas.Cold -> LiverVas.Cold
	$F_GI/GIVas*GIVas.Cold$
372	Art.Albumin -> Tumor2Vas.Albumin
	$F_Tumor2/Art*Art.Albumin$

373	Art.Albumin -> Tumor1Vas.Albumin
	<i>F_Tumor1/Art*Art.Albumin</i>
374	Tumor1Vas.Albumin -> Vein.Albumin
	<i>F_Tumor1/Tumor1Vas*Tumor1Vas.Albumin</i>
375	Tumor2Vas.Albumin -> Vein.Albumin
	<i>F_Tumor2/Tumor2Vas*Tumor2Vas.Albumin</i>
376	Art.Albumin -> KidneyVas.Albumin
	<i>F_Kidney/Art*Art.Albumin</i>
377	KidneyVas.Albumin -> Vein.Albumin
	<i>F_Kidney/KidneyVas*KidneyVas.Albumin</i>
378	Art.Albumin -> SpleenVas.Albumin
	<i>F_Spleen/Art*Art.Albumin</i>
379	SpleenVas.Albumin -> Vein.Albumin
	<i>F_Spleen/SpleenVas*SpleenVas.Albumin</i>
380	Art.Albumin -> ProstateVas.Albumin
	<i>F_Prostate/Art*Art.Albumin</i>
381	ProstateVas.Albumin -> Vein.Albumin
	<i>F_Prostate/ProstateVas*ProstateVas.Albumin</i>
382	Art.Albumin -> GIVas.Albumin
	<i>F_GI/Art*Art.Albumin</i>
383	GIVas.Albumin -> Vein.Albumin
	<i>F_GI/GIVas*GIVas.Albumin</i>
384	Art.Albumin -> SkinVas.Albumin
	<i>F_Skin/Art*Art.Albumin</i>
385	SkinVas.Albumin -> Vein.Albumin
	<i>F_Skin/SkinVas*SkinVas.Albumin</i>
386	Art.Albumin -> BrainVas.Albumin
	<i>F_Brain/Art*Art.Albumin</i>
387	BrainVas.Albumin -> Vein.Albumin
	<i>F_Brain/BrainVas*BrainVas.Albumin</i>
388	Vein.Albumin -> LungsVas.Albumin
	<i>F_Lungs/Vein*Vein.Albumin</i>
389	LungsVas.Albumin -> Art.Albumin
	<i>F_Lungs/LungsVas*LungsVas.Albumin</i>
390	Art.Albumin -> HeartVas.Albumin
	<i>F_Heart/Art*Art.Albumin</i>
391	HeartVas.Albumin -> Vein.Albumin
	<i>F_Heart/HeartVas*HeartVas.Albumin</i>
392	Art.Albumin -> BoneVas.Albumin
	<i>F_Bone/Art*Art.Albumin</i>
393	BoneVas.Albumin -> Vein.Albumin
	<i>F_Bone/BoneVas*BoneVas.Albumin</i>
394	Art.Albumin -> AdiposeVas.Albumin
	<i>F_Adipose/Art*Art.Albumin</i>
395	AdiposeVas.Albumin -> Vein.Albumin
	<i>F_Adipose/AdiposeVas*AdiposeVas.Albumin</i>
396	Art.Albumin -> RedMarrowVas.Albumin
	<i>F_RedMarrow/Art*Art.Albumin</i>
397	RedMarrowVas.Albumin -> Vein.Albumin
	<i>F_RedMarrow/RedMarrowVas*RedMarrowVas.Albumin</i>
398	Art.Albumin -> MuscleVas.Albumin
	<i>F_Muscle/Art*Art.Albumin</i>
399	MuscleVas.Albumin -> Vein.Albumin
	<i>F_Muscle/MuscleVas*MuscleVas.Albumin</i>
400	Art.Albumin -> RestVas.Albumin
	<i>F_Rest/Art*Art.Albumin</i>

401	RestVas.Albumin -> Vein.Albumin
	<i>F_Rest/RestVas*RestVas.Albumin</i>
402	Art.Albumin -> LiverVas.Albumin
	<i>F_Liver/Art*Art.Albumin</i>
403	LiverVas.Albumin -> Vein.Albumin
	<i>F_Liver/LiverVas*LiverVas.Albumin</i>
404	Art.Albumin -> SGVas.Albumin
	<i>F_SG/Art*Art.Albumin</i>
405	SGVas.Albumin -> Vein.Albumin
	<i>F_SG/SGVas*SGVas.Albumin</i>
406	Art.Albumin -> TumorRestVas.Albumin
	<i>F_TumorRest/Art*Art.Albumin</i>
407	TumorRestVas.Albumin -> Vein.Albumin
	<i>F_TumorRest/TumorRestVas*TumorRestVas.Albumin</i>
408	Tumor2Vas.Albumin <-> Tumor2Int.Albumin
	<i>PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.Albumin - PSAlb_Tumor2/Tumor2Int*Tumor2Int.Albumin</i>
409	Tumor1Vas.Albumin <-> Tumor1Int.Albumin
	<i>PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.Albumin - PSAlb_Tumor1/Tumor1Int*Tumor1Int.Albumin</i>
410	TumorRestVas.Albumin <-> TumorRestInt.Albumin
	<i>PSAlb_TumorRest/TumorRestVas*TumorRestVas.Albumin - PSAlb_TumorRest/TumorRestInt*TumorRestInt.Albumin</i>

Observables

	Observables
1	Tumor1_TotalHot = Tumor1Vas.Hot + Tumor1Int.Hot + Tumor1Bound.Hot + Tumor1Intern.Hot + Tumor1Vas.AlbHot + Tumor1Int.AlbHot
2	Tumor2_TotalHot = Tumor2Vas.Hot + Tumor2Int.Hot + Tumor2Bound.Hot + Tumor2Intern.Hot + Tumor2Vas.AlbHot + Tumor2Int.AlbHot
3	TumorTotalHot = Tumor1_TotalHot
4	KidneyTotalHot = KidneyVas.Hot + KidneyInt.Hot + KidneyBound.Hot + KidneyIntern.Hot
5	SGTotalHot = SGVas.Hot + SGInt.Hot + SGBound.Hot + SGIntern.Hot
6	LiverTotalHot = LiverVas.Hot + LiverInt.Hot + LiverBound.Hot + LiverIntern.Hot
7	ProstateTotalHot = ProstateVas.Hot + ProstateInt.Hot + ProstateBound.Hot + ProstateIntern.Hot
8	SpleenTotalHot = SpleenVas.Hot + SpleenInt.Hot + SpleenBound.Hot + SpleenIntern.Hot
9	RedMarrowTotalHot = RedMarrowVas.Hot + RedMarrowInt.Hot
10	BoneTotalHot = BoneVas.Hot + BoneInt.Hot
11	TIA_TumorTotal = trapz(time, TumorTotalHot .* lambdaPhys ./ 60 .* numberPerNanomole)
12	TIA_Kidney = trapz(time, KidneyTotalHot .* lambdaPhys ./ 60 .* numberPerNanomole)
13	TIA_SG = trapz(time, SGTotalHot .* lambdaPhys ./ 60 .* numberPerNanomole)
14	TIA_Liver = trapz(time, LiverTotalHot .* lambdaPhys ./ 60 .* numberPerNanomole)
15	TIA_Spleen = trapz(time, SpleenTotalHot .* lambdaPhys ./ 60 .* numberPerNanomole)
16	TIA_RedMarrow = trapz(time, RedMarrowTotalHot .* lambdaPhys ./ 60 .* numberPerNanomole)
17	HotStuffBlood = Vein.Hot + Vein.AlbHot
18	BloodTIA = trapz(time, HotStuffBlood .* lambdaPhys ./ 60 .* numberPerNanomole)

Repeat Doses

	TargetName	Amount	Rate	StartTime	RepeatCount	Interval	Name
1	Vein.Hot	HotPerInjection	PerInjectionRate	0 (minute)	RepeatCount	RepeatTimeInterval	HotInjection
2	Vein.Cold	ColdPerInjection	PerInjectionRate	0 (minute)	RepeatCount	RepeatTimeInterval	ColdInjection

Model Equations

ODEs

	ODEs
1	d(Tumor2Vas.Hot)/dt = -(lambdaPhys*Tumor2Vas.Hot) - (k_on_toAlb*Tumor2Vas.Hot*Tumor2Vas.Albumin/Tumor2Vas-k_off_toAlb*Tumor2Vas.AlbHot) - (PS_Tumor2/Tumor2Vas*Tumor2Vas.Hot-PS_Tumor2/Tumor2Int*Tumor2Int.Hot) + (F_Tumor2/Art*Art.Hot) - (F_Tumor2/Tumor2Vas*Tumor2Vas.Hot)
2	d(Tumor2Vas.Cold)/dt = (lambdaPhys*Tumor2Vas.Hot) - (k_on_toAlb*Tumor2Vas.Cold*Tumor2Vas.Albumin/Tumor2Vas-k_off_toAlb*Tumor2Vas.AlbCold) - (PS_Tumor2/Tumor2Vas*Tumor2Vas.Cold-PS_Tumor2/Tumor2Int*Tumor2Int.Cold) + (F_Tumor2/Art*Art.Cold) - (F_Tumor2/Tumor2Vas*Tumor2Vas.Cold)

3	d(Tumor2Vas.AlbHot)/dt = (k_on_toAlb*Tumor2Vas.Hot*Tumor2Vas.Albumin/Tumor2Vas-k_off_toAlb*Tumor2Vas.AlbHot) - (lambdaPhys*Tumor2Vas.AlbHot) - (PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.AlbHot) + (F_Tumor2/Art*Art.AlbHot) - (F_Tumor2/Tumor2Vas*Tumor2Vas.AlbHot)
4	d(Tumor2Vas.AlbCold)/dt = (lambdaPhys*Tumor2Vas.AlbHot) + (k_on_toAlb*Tumor2Vas.Cold*Tumor2Vas.Albumin/Tumor2Vas-k_off_toAlb*Tumor2Vas.AlbCold) - (PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.AlbCold) + (F_Tumor2/Art*Art.AlbCold) - (F_Tumor2/Tumor2Vas*Tumor2Vas.AlbCold)
5	d(Tumor2Vas.Albumin)/dt = -(k_on_toAlb*Tumor2Vas.Hot*Tumor2Vas.Albumin/Tumor2Vas-k_off_toAlb*Tumor2Vas.AlbHot) - (k_on_toAlb*Tumor2Vas.Cold*Tumor2Vas.Albumin/Tumor2Vas-k_off_toAlb*Tumor2Vas.AlbCold) + (F_Tumor2/Art*Art.Albumin) - (F_Tumor2/Tumor2Vas*Tumor2Vas.Albumin) - (PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.Albumin-PSAlb_Tumor2/Tumor2Int*Tumor2Int.Albumin)
6	d(Tumor2Int.Hot)/dt = (PS_Tumor2/Tumor2Vas*Tumor2Vas.Hot-PS_Tumor2/Tumor2Int*Tumor2Int.Hot) - (k_on/Tumor2Int*Tumor2Int.Hot*Tumor2.R-k_off*Tumor2Bound.Hot) - (lambdaPhys*Tumor2Int.Hot) - (k_on_toAlb*Tumor2Int.Hot*Tumor2Int.Albumin/Tumor2Int-k_off_toAlb*Tumor2Int.AlbHot)
7	d(Tumor2Int.Cold)/dt = (PS_Tumor2/Tumor2Vas*Tumor2Vas.Cold-PS_Tumor2/Tumor2Int*Tumor2Int.Cold) - (k_on/Tumor2Int*Tumor2Int.Cold*Tumor2.R-k_off*Tumor2Bound.Cold) + (lambdaPhys*Tumor2Int.Hot) - (k_on_toAlb*Tumor2Int.Cold*Tumor2Int.Albumin/Tumor2Int-k_off_toAlb*Tumor2Int.AlbCold)
8	d(Tumor2Int.AlbHot)/dt = (PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.AlbHot) + (k_on_toAlb*Tumor2Int.Hot*Tumor2Int.Albumin/Tumor2Int-k_off_toAlb*Tumor2Int.AlbHot) - (lambdaPhys*Tumor2Int.AlbHot)
9	d(Tumor2Int.AlbCold)/dt = (PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.AlbCold) + (lambdaPhys*Tumor2Int.AlbHot) + (k_on_toAlb*Tumor2Int.Cold*Tumor2Int.Albumin/Tumor2Int-k_off_toAlb*Tumor2Int.AlbCold)
10	d(Tumor2Int.Albumin)/dt = -(k_on_toAlb*Tumor2Int.Hot*Tumor2Int.Albumin/Tumor2Int-k_off_toAlb*Tumor2Int.AlbHot) - (k_on_toAlb*Tumor2Int.Cold*Tumor2Int.Albumin/Tumor2Int-k_off_toAlb*Tumor2Int.AlbCold) + (PSAlb_Tumor2/Tumor2Vas*Tumor2Vas.Albumin-PSAlb_Tumor2/Tumor2Int*Tumor2Int.Albumin)
11	d(Tumor2Bound.Hot)/dt = (k_on/Tumor2Int*Tumor2Int.Hot*Tumor2.R-k_off*Tumor2Bound.Hot) - (lambdaIntern_Tumor2*Tumor2Bound.Hot) - (lambdaPhys*Tumor2Bound.Hot)
12	d(Tumor2Bound.Cold)/dt = (k_on/Tumor2Int*Tumor2Int.Cold*Tumor2.R-k_off*Tumor2Bound.Cold) - (lambdaIntern_Tumor2*Tumor2Bound.Cold) + (lambdaPhys*Tumor2Bound.Hot)
13	d(Tumor2Intern.Hot)/dt = (lambdaIntern_Tumor2*Tumor2Bound.Hot) - (lambdaPhys*Tumor2Intern.Hot) - (lambdaRel_Tumor2*Tumor2Intern.Hot)
14	d(Tumor2Intern.Cold)/dt = (lambdaIntern_Tumor2*Tumor2Bound.Cold) + (lambdaPhys*Tumor2Intern.Hot) - (lambdaRel_Tumor2*Tumor2Intern.Cold)
15	d(Art.Hot)/dt = -(F_Tumor2/Art*Art.Hot) - (lambdaPhys*Art.Hot) - (k_on_toAlb*Art.Hot*Art.Albumin/Art-k_off_toAlb*Art.AlbHot) - (F_Tumor1/Art*Art.Hot) - (F_Kidney/Art*Art.Hot) - (F_Heart/Art*Art.Hot) - (F_SG/Art*Art.Hot) - (F_Bone/Art*Art.Hot) - (F_TumorRest/Art*Art.Hot) - (F_Spleen/Art*Art.Hot) - (F_Liver/Art*Art.Hot) - (F_Prostate/Art*Art.Hot) - (F_GI/Art*Art.Hot) - (F_Rest/Art*Art.Hot) - (F_Skin/Art*Art.Hot) - (F_Muscle/Art*Art.Hot) - (F_Brain/Art*Art.Hot) - (F_RedMarrow/Art*Art.Hot) + (F_Lungs/LungsVas*LungsVas.Hot) - (F_Adipose/Art*Art.Hot)
16	d(Art.Cold)/dt = -(F_Tumor2/Art*Art.Cold) + (lambdaPhys*Art.Hot) - (k_on_toAlb*Art.Cold*Art.Albumin/Art-k_off_toAlb*Art.AlbCold) - (F_Tumor1/Art*Art.Cold) - (F_Kidney/Art*Art.Cold) - (F_Heart/Art*Art.Cold) - (F_SG/Art*Art.Cold) - (F_Bone/Art*Art.Cold) - (F_TumorRest/Art*Art.Cold) - (F_Spleen/Art*Art.Cold) - (F_Liver/Art*Art.Cold) - (F_Prostate/Art*Art.Cold) - (F_GI/Art*Art.Cold) - (F_Rest/Art*Art.Cold) - (F_Skin/Art*Art.Cold) - (F_Muscle/Art*Art.Cold) - (F_Brain/Art*Art.Cold) - (F_RedMarrow/Art*Art.Cold) + (F_Lungs/LungsVas*LungsVas.Cold) - (F_Adipose/Art*Art.Cold)
17	d(Art.AlbHot)/dt = -(F_Tumor2/Art*Art.AlbHot) + (k_on_toAlb*Art.Hot*Art.Albumin/Art-k_off_toAlb*Art.AlbHot) - (lambdaPhys*Art.AlbHot) - (F_Tumor1/Art*Art.AlbHot) - (F_Kidney/Art*Art.AlbHot) - (F_Heart/Art*Art.AlbHot) - (F_SG/Art*Art.AlbHot) - (F_Bone/Art*Art.AlbHot) - (F_TumorRest/Art*Art.AlbHot) - (F_Spleen/Art*Art.AlbHot) - (F_Liver/Art*Art.AlbHot) - (F_Prostate/Art*Art.AlbHot) - (F_GI/Art*Art.AlbHot) - (F_Rest/Art*Art.AlbHot) - (F_Skin/Art*Art.AlbHot) - (F_Muscle/Art*Art.AlbHot) - (F_Brain/Art*Art.AlbHot) - (F_RedMarrow/Art*Art.AlbHot) + (F_Lungs/LungsVas*LungsVas.AlbHot) - (F_Adipose/Art*Art.AlbHot)
18	d(Art.AlbCold)/dt = -(F_Tumor2/Art*Art.AlbCold) + (lambdaPhys*Art.AlbHot) + (k_on_toAlb*Art.Cold*Art.Albumin/Art-k_off_toAlb*Art.AlbCold) - (F_Tumor1/Art*Art.AlbCold) - (F_Kidney/Art*Art.AlbCold) - (F_Heart/Art*Art.AlbCold) - (F_SG/Art*Art.AlbCold) - (F_Bone/Art*Art.AlbCold) - (F_TumorRest/Art*Art.AlbCold) - (F_Spleen/Art*Art.AlbCold) - (F_Liver/Art*Art.AlbCold) - (F_Prostate/Art*Art.AlbCold) - (F_GI/Art*Art.AlbCold) - (F_Rest/Art*Art.AlbCold) - (F_Skin/Art*Art.AlbCold) - (F_Muscle/Art*Art.AlbCold) - (F_Brain/Art*Art.AlbCold) - (F_RedMarrow/Art*Art.AlbCold) + (F_Lungs/LungsVas*LungsVas.AlbCold) - (F_Adipose/Art*Art.AlbCold)
19	d(Art.Albumin)/dt = -(k_on_toAlb*Art.Hot*Art.Albumin/Art-k_off_toAlb*Art.AlbHot) - (k_on_toAlb*Art.Cold*Art.Albumin/Art-k_off_toAlb*Art.AlbCold) - (F_Tumor2/Art*Art.Albumin) - (F_Tumor1/Art*Art.Albumin) - (F_Kidney/Art*Art.Albumin) - (F_Spleen/Art*Art.Albumin) - (F_Prostate/Art*Art.Albumin) - (F_GI/Art*Art.Albumin) - (F_Skin/Art*Art.Albumin) - (F_Brain/Art*Art.Albumin) + (F_Lungs/LungsVas*LungsVas.Albumin) - (F_Heart/Art*Art.Albumin) - (F_Bone/Art*Art.Albumin) - (F_Adipose/Art*Art.Albumin) - (F_RedMarrow/Art*Art.Albumin) - (F_Muscle/Art*Art.Albumin) - (F_Rest/Art*Art.Albumin) - (F_Liver/Art*Art.Albumin) - (F_SG/Art*Art.Albumin) - (F_TumorRest/Art*Art.Albumin)
20	d(Vein.Hot)/dt = (F_Tumor2/Tumor2Vas*Tumor2Vas.Hot) - (lambdaPhys*Vein.Hot) - (k_on_toAlb*Vein.Hot*Vein.Albumin/Vein-k_off_toAlb*Vein.AlbHot) + (F_Tumor1/Tumor1Vas*Tumor1Vas.Hot) + (F_Kidney/KidneyVas*KidneyVas.Hot) + (F_Heart/HeartVas*HeartVas.Hot) + (F_SG/SGVas*SGVas.Hot) + (F_Bone/BoneVas*BoneVas.Hot) + (F_TumorRest/TumorRestVas*TumorRestVas.Hot) + (F_Liver/LiverVas*LiverVas.Hot) + (F_Prostate/ProstateVas*ProstateVas.Hot) + (F_Rest/RestVas*RestVas.Hot) + (F_Skin/SkinVas*SkinVas.Hot) + (F_Muscle/MuscleVas*MuscleVas.Hot) + (F_Brain/BrainVas*BrainVas.Hot) + (F_RedMarrow/RedMarrowVas*RedMarrowVas.Hot) - (F_Lungs/Vein*Vein.Hot) + (F_Adipose/AdiposeVas*AdiposeVas.Hot) + HotInjection
21	d(Vein.Cold)/dt = (F_Tumor2/Tumor2Vas*Tumor2Vas.Cold) + (lambdaPhys*Vein.Hot) - (k_on_toAlb*Vein.Cold*Vein.Albumin/Vein-k_off_toAlb*Vein.AlbCold) + (F_Tumor1/Tumor1Vas*Tumor1Vas.Cold) + (F_Kidney/KidneyVas*KidneyVas.Cold) + (F_Heart/HeartVas*HeartVas.Cold) + (F_SG/SGVas*SGVas.Cold) + (F_Bone/BoneVas*BoneVas.Cold) + (F_TumorRest/TumorRestVas*TumorRestVas.Cold) + (F_Liver/LiverVas*LiverVas.Cold) + (F_Prostate/ProstateVas*ProstateVas.Cold) + (F_Rest/RestVas*RestVas.Cold) + (F_Skin/SkinVas*SkinVas.Cold) + (F_Muscle/MuscleVas*MuscleVas.Cold) + (F_Brain/BrainVas*BrainVas.Cold) + (F_RedMarrow/RedMarrowVas*RedMarrowVas.Cold) - (F_Lungs/Vein*Vein.Cold) + (F_Adipose/AdiposeVas*AdiposeVas.Cold) + ColdInjection
22	d(Vein.AlbHot)/dt = (F_Tumor2/Tumor2Vas*Tumor2Vas.AlbHot) + (k_on_toAlb*Vein.Hot*Vein.Albumin/Vein-k_off_toAlb*Vein.AlbHot) - (lambdaPhys*Vein.AlbHot) + (F_Tumor1/Tumor1Vas*Tumor1Vas.AlbHot) + (F_Kidney/KidneyVas*KidneyVas.AlbHot) + (F_Heart/HeartVas*HeartVas.AlbHot) + (F_SG/SGVas*SGVas.AlbHot) + (F_Bone/BoneVas*BoneVas.AlbHot) + (F_TumorRest/TumorRestVas*TumorRestVas.AlbHot) + (F_Liver/LiverVas*LiverVas.AlbHot) + (F_Prostate/ProstateVas*ProstateVas.AlbHot) + (F_Rest/RestVas*RestVas.AlbHot) + (F_Skin/SkinVas*SkinVas.AlbHot) + (F_Muscle/MuscleVas*MuscleVas.AlbHot) + (F_Brain/BrainVas*BrainVas.AlbHot) + (F_RedMarrow/RedMarrowVas*RedMarrowVas.AlbHot) - (F_Lungs/Vein*Vein.AlbHot) + (F_Adipose/AdiposeVas*AdiposeVas.AlbHot)

23	$\begin{aligned} d(\text{Vein.AlbCold})/dt = & (\text{F_Tumor2/Tumor2Vas*Tumor2Vas.AlbCold}) + (\text{lambdaPhys*Vein.AlbHot}) + \\ & (\text{k_on_toAlb*Vein.Cold*Vein.Albumin/Vein-k_off_toAlb*Vein.AlbCold}) + (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.AlbCold}) + \\ & (\text{F_Kidney/KidneyVas*KidneyVas.AlbCold}) + (\text{F_Heart/HeartVas*HeartVas.AlbCold}) + (\text{F_SG/SGVas*SGVas.AlbCold}) + \\ & (\text{F_Bone/BoneVas*BoneVas.AlbCold}) + (\text{F_TumorRest/TumorRestVas*TumorRestVas.AlbCold}) + (\text{F_Liver/LiverVas*LiverVas.AlbCold}) + \\ & (\text{F_Prostate/ProstateVas*ProstateVas.AlbCold}) + (\text{F_Rest/RestVas*RestVas.AlbCold}) + (\text{F_Skin/SkinVas*SkinVas.AlbCold}) + \\ & (\text{F_Muscle/MuscleVas*MuscleVas.AlbCold}) + (\text{F_Brain/BrainVas*BrainVas.AlbCold}) + \\ & (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.AlbCold}) - (\text{F_Lungs/Vein*Vein.AlbCold}) + (\text{F_Adipose/AdiposeVas*AdiposeVas.AlbCold}) \end{aligned}$
24	$\begin{aligned} d(\text{Vein.Albumin})/dt = & -(\text{k_on_toAlb*Vein.Hot*Vein.Albumin/Vein-k_off_toAlb*Vein.AlbHot}) - (\text{k_on_toAlb*Vein.Cold*Vein.Albumin/Vein-k_off_toAlb*Vein.AlbCold}) + \\ & (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.Albumin}) + (\text{F_Tumor2/Tumor2Vas*Tumor2Vas.Albumin}) + (\text{F_Kidney/KidneyVas*KidneyVas.Albumin}) + \\ & (\text{F_Spleen/SpleenVas*SpleenVas.Albumin}) + (\text{F_Prostate/ProstateVas*ProstateVas.Albumin}) + (\text{F_GI/GIVas*GIVas.Albumin}) + \\ & (\text{F_Skin/SkinVas*SkinVas.Albumin}) + (\text{F_Brain/BrainVas*BrainVas.Albumin}) - (\text{F_Lungs/Vein*Vein.Albumin}) + \\ & (\text{F_Heart/HeartVas*HeartVas.Albumin}) + (\text{F_Bone/BoneVas*BoneVas.Albumin}) + (\text{F_Adipose/AdiposeVas*AdiposeVas.Albumin}) + \\ & (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.Albumin}) + (\text{F_Muscle/MuscleVas*MuscleVas.Albumin}) + (\text{F_Rest/RestVas*RestVas.Albumin}) + \\ & (\text{F_Liver/LiverVas*LiverVas.Albumin}) + (\text{F_SG/SGVas*SGVas.Albumin}) + (\text{F_TumorRest/TumorRestVas*TumorRestVas.Albumin}) \end{aligned}$
25	$\begin{aligned} d(\text{Tumor1Vas.Hot})/dt = & -(\text{lambdaPhys*Tumor1Vas.Hot}) - (\text{k_on_toAlb*Tumor1Vas.Hot*Tumor1Vas.Albumin/Tumor1Vas-k_off_toAlb*Tumor1Vas.AlbHot}) - \\ & (\text{PS_Tumor1/Tumor1Vas*Tumor1Vas.Hot-PS_Tumor1/Tumor1Int*Tumor1Int.Hot}) + (\text{F_Tumor1/Art*Art.Hot}) - (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.Hot}) \end{aligned}$
26	$\begin{aligned} d(\text{Tumor1Vas.Cold})/dt = & (\text{lambdaPhys*Tumor1Vas.Hot}) - (\text{k_on_toAlb*Tumor1Vas.Cold*Tumor1Vas.Albumin/Tumor1Vas-k_off_toAlb*Tumor1Vas.AlbCold}) - \\ & (\text{PS_Tumor1/Tumor1Vas*Tumor1Vas.Cold-PS_Tumor1/Tumor1Int*Tumor1Int.Cold}) + (\text{F_Tumor1/Art*Art.Cold}) - (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.Cold}) \end{aligned}$
27	$\begin{aligned} d(\text{Tumor1Vas.AlbHot})/dt = & (\text{k_on_toAlb*Tumor1Vas.Hot*Tumor1Vas.Albumin/Tumor1Vas-k_off_toAlb*Tumor1Vas.AlbHot}) - \\ & (\text{lambdaPhys*Tumor1Vas.AlbHot}) - (\text{PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.AlbHot-PSAlb_Tumor1/Tumor1Int*Tumor1Int.AlbHot}) + \\ & (\text{F_Tumor1/Art*Art.AlbHot}) - (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.AlbHot}) \end{aligned}$
28	$\begin{aligned} d(\text{Tumor1Vas.AlbCold})/dt = & (\text{lambdaPhys*Tumor1Vas.AlbHot}) + (\text{k_on_toAlb*Tumor1Vas.Cold*Tumor1Vas.Albumin/Tumor1Vas-k_off_toAlb*Tumor1Vas.AlbCold}) - \\ & (\text{PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.AlbCold-PSAlb_Tumor1/Tumor1Int*Tumor1Int.AlbCold}) + (\text{F_Tumor1/Art*Art.AlbCold}) - (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.AlbCold}) \end{aligned}$
29	$\begin{aligned} d(\text{Tumor1Vas.Albumin})/dt = & -(\text{k_on_toAlb*Tumor1Vas.Hot*Tumor1Vas.Albumin/Tumor1Vas-k_off_toAlb*Tumor1Vas.AlbHot}) - \\ & (\text{k_on_toAlb*Tumor1Vas.Cold*Tumor1Vas.Albumin/Tumor1Vas-k_off_toAlb*Tumor1Vas.AlbCold}) + (\text{F_Tumor1/Art*Art.Albumin}) - \\ & (\text{F_Tumor1/Tumor1Vas*Tumor1Vas.Albumin}) - (\text{PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.Albumin-PSAlb_Tumor1/Tumor1Int*Tumor1Int.Albumin}) \end{aligned}$
30	$\begin{aligned} d(\text{Tumor1Int.Hot})/dt = & (\text{PS_Tumor1/Tumor1Vas*Tumor1Vas.Hot-PS_Tumor1/Tumor1Int*Tumor1Int.Hot}) - \\ & (\text{k_on_toAlb*Tumor1Int*Hot*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbHot}) - (\text{lambdaPhys*Tumor1Int.Hot}) - \\ & (\text{k_on_toAlb*Tumor1Int.Hot*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbHot}) \end{aligned}$
31	$\begin{aligned} d(\text{Tumor1Int.Cold})/dt = & (\text{PS_Tumor1/Tumor1Vas*Tumor1Vas.Cold-PS_Tumor1/Tumor1Int*Tumor1Int.Cold}) - \\ & (\text{k_on_toAlb*Tumor1Int*Cold*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbCold}) + (\text{lambdaPhys*Tumor1Int.Hot}) - \\ & (\text{k_on_toAlb*Tumor1Int.Cold*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbCold}) \end{aligned}$
32	$\begin{aligned} d(\text{Tumor1Int.AlbHot})/dt = & (\text{PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.AlbHot-PSAlb_Tumor1/Tumor1Int*Tumor1Int.AlbHot}) + \\ & (\text{k_on_toAlb*Tumor1Int.Hot*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbHot}) - (\text{lambdaPhys*Tumor1Int.AlbHot}) \end{aligned}$
33	$\begin{aligned} d(\text{Tumor1Int.AlbCold})/dt = & (\text{PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.AlbCold-PSAlb_Tumor1/Tumor1Int*Tumor1Int.AlbCold}) + \\ & (\text{lambdaPhys*Tumor1Int.AlbHot}) + (\text{k_on_toAlb*Tumor1Int.Cold*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbCold}) \end{aligned}$
34	$\begin{aligned} d(\text{Tumor1Int.Albumin})/dt = & -(\text{k_on_toAlb*Tumor1Int.Hot*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbHot}) - \\ & (\text{k_on_toAlb*Tumor1Int.Cold*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbCold}) + (\text{PSAlb_Tumor1/Tumor1Vas*Tumor1Vas.Albumin-PSAlb_Tumor1/Tumor1Int*Tumor1Int.Albumin}) \end{aligned}$
35	$\begin{aligned} d(\text{Tumor1Bound.Hot})/dt = & (\text{k_on_toAlb*Tumor1Int*Hot*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbHot}) - \\ & (\text{lambdaPhys*Tumor1Bound.Hot}) - (\text{lambdaPhys*Tumor1Bound.Hot}) \end{aligned}$
36	$\begin{aligned} d(\text{Tumor1Bound.Cold})/dt = & (\text{k_on_toAlb*Tumor1Int*Cold*Tumor1Int.Albumin/Tumor1Int-k_off_toAlb*Tumor1Int.AlbCold}) - \\ & (\text{lambdaPhys*Tumor1Bound.Cold}) + (\text{lambdaPhys*Tumor1Bound.Hot}) \end{aligned}$
37	$\begin{aligned} d(\text{Tumor1Intern.Hot})/dt = & (\text{lambdaPhys*Tumor1Intern.Hot}) - (\text{lambdaPhys*Tumor1Intern.Hot}) - (\text{lambdaPhys*Tumor1Intern.Hot}) \end{aligned}$
38	$\begin{aligned} d(\text{Tumor1Intern.Cold})/dt = & (\text{lambdaPhys*Tumor1Intern.Cold}) + (\text{lambdaPhys*Tumor1Intern.Hot}) - (\text{lambdaPhys*Tumor1Intern.Cold}) \end{aligned}$
39	$\begin{aligned} d(\text{KidneyVas.Hot})/dt = & -(\text{lambdaPhys*KidneyVas.Hot}) - (\text{k_on_toAlb*KidneyVas.Hot*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbHot}) + \\ & (\text{F_Kidney/Art*Art.Hot}) - (\text{F_Kidney/KidneyVas*KidneyVas.Hot}) - (\text{GFR*phi/KidneyVas*KidneyVas.Hot}) + (\text{GFR*phi*(1-f_exc)/KidneyIntern*KidneyIntera.Hot}) \end{aligned}$
40	$\begin{aligned} d(\text{KidneyVas.Cold})/dt = & (\text{lambdaPhys*KidneyVas.Hot}) - (\text{k_on_toAlb*KidneyVas.Cold*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbCold}) + \\ & (\text{F_Kidney/Art*Art.Cold}) - (\text{F_Kidney/KidneyVas*KidneyVas.Cold}) - (\text{GFR*phi/KidneyVas*KidneyVas.Cold}) + (\text{GFR*phi*(1-f_exc)/KidneyIntern*KidneyIntera.Cold}) \end{aligned}$
41	$\begin{aligned} d(\text{KidneyVas.AlbHot})/dt = & (\text{k_on_toAlb*KidneyVas.Hot*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbHot}) - \\ & (\text{lambdaPhys*KidneyVas.AlbHot}) + (\text{F_Kidney/Art*Art.AlbHot}) - (\text{F_Kidney/KidneyVas*KidneyVas.AlbHot}) \end{aligned}$
42	$\begin{aligned} d(\text{KidneyVas.AlbCold})/dt = & (\text{lambdaPhys*KidneyVas.AlbHot}) + (\text{k_on_toAlb*KidneyVas.Cold*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbCold}) + \\ & (\text{F_Kidney/Art*Art.AlbCold}) - (\text{F_Kidney/KidneyVas*KidneyVas.AlbCold}) \end{aligned}$
43	$\begin{aligned} d(\text{KidneyVas.Albumin})/dt = & -(\text{k_on_toAlb*KidneyVas.Hot*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbHot}) - \\ & (\text{k_on_toAlb*KidneyVas.Cold*KidneyVas.Albumin/KidneyVas-k_off_toAlb*KidneyVas.AlbCold}) + (\text{F_Kidney/Art*Art.Albumin}) - \\ & (\text{F_Kidney/KidneyVas*KidneyVas.Albumin}) \end{aligned}$
44	$\begin{aligned} d(\text{KidneyInt.Hot})/dt = & -(\text{k_on_toAlb*KidneyInt*Hot*KidneyInt.Albumin/KidneyInt-k_off_toAlb*KidneyInt.AlbHot}) - \\ & (\text{lambdaPhys*KidneyInt.Hot}) + (\text{GFR*phi/KidneyVas*KidneyVas.Hot}) - (\text{GFR*phi*(1-f_exc)/KidneyInt*KidneyInt.Hot}) - (\text{GFR*phi*f_exc/KidneyInt*KidneyInt.Hot}) \end{aligned}$
45	$\begin{aligned} d(\text{KidneyInt.Cold})/dt = & -(\text{k_on_toAlb*KidneyInt*Cold*KidneyInt.Albumin/KidneyInt-k_off_toAlb*KidneyInt.AlbCold}) - \\ & (\text{lambdaPhys*KidneyInt.Cold}) + (\text{GFR*phi/KidneyVas*KidneyVas.Cold}) - (\text{GFR*phi*(1-f_exc)/KidneyInt*KidneyInt.Cold}) - (\text{GFR*phi*f_exc/KidneyInt*KidneyInt.Cold}) \end{aligned}$
46	$\begin{aligned} d(\text{KidneyBound.Hot})/dt = & (\text{k_on_toAlb*KidneyInt*Hot*KidneyInt.Albumin/KidneyInt-k_off_toAlb*KidneyInt.AlbHot}) - \\ & (\text{lambdaPhys*KidneyBound.Hot}) - (\text{lambdaPhys*KidneyBound.Hot}) \end{aligned}$
47	$\begin{aligned} d(\text{KidneyBound.Cold})/dt = & (\text{k_on_toAlb*KidneyInt*Cold*KidneyInt.Albumin/KidneyInt-k_off_toAlb*KidneyInt.AlbCold}) - \\ & (\text{lambdaPhys*KidneyBound.Cold}) + (\text{lambdaPhys*KidneyBound.Hot}) \end{aligned}$
48	$\begin{aligned} d(\text{KidneyIntern.Hot})/dt = & (\text{lambdaPhys*KidneyIntern.Hot}) - (\text{lambdaPhys*KidneyIntern.Hot}) - (\text{lambdaPhys*KidneyIntern.Hot}) \end{aligned}$

	(lambdaRel_Kidney*KidneyIntern.Hot)
49	d(KidneyIntern.Cold)/dt = (lambdaIntern_Kidney*KidneyBound.Cold) + (lambdaPhys*KidneyIntern.Hot) - (lambdaRel_Kidney*KidneyIntern.Cold)
50	d(KidneyIntera.Hot)/dt = (GFR*phi*(1-f_exc)/KidneyInt*KidneyInt.Hot) - (GFR*phi*(1-f_exc)/KidneyIntern*KidneyIntera.Hot)
51	d(KidneyIntera.Cold)/dt = (GFR*phi*(1-f_exc)/KidneyInt*KidneyInt.Cold) - (GFR*phi*(1-f_exc)/KidneyIntern*KidneyIntera.Cold)
52	d(HeartVas.Hot)/dt = -(lambdaPhys*HeartVas.Hot) - (k_on_toAlb*HeartVas.Hot*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbHot) - (PS_Heart/HeartVas*HeartVas.Hot-PS_Heart/HeartInt*HeartInt.Hot) + (F_Heart/Art*Art.Hot) - (F_Heart/HeartVas*HeartVas.Hot)
53	d(HeartVas.Cold)/dt = (lambdaPhys*HeartVas.Hot) - (k_on_toAlb*HeartVas.Cold*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbCold) - (PS_Heart/HeartVas*HeartVas.Cold-PS_Heart/HeartInt*HeartInt.Cold) + (F_Heart/Art*Art.Cold) - (F_Heart/HeartVas*HeartVas.Cold)
54	d(HeartVas.AlbHot)/dt = (k_on_toAlb*HeartVas.Hot*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbHot) - (lambdaPhys*HeartVas.AlbHot) + (F_Heart/Art*Art.AlbHot) - (F_Heart/HeartVas*HeartVas.AlbHot)
55	d(HeartVas.AlbCold)/dt = (lambdaPhys*HeartVas.AlbHot) + (k_on_toAlb*HeartVas.Cold*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbCold) + (F_Heart/Art*Art.AlbCold) - (F_Heart/HeartVas*HeartVas.AlbCold)
56	d(HeartVas.Albumin)/dt = -(k_on_toAlb*HeartVas.Hot*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbHot) - (k_on_toAlb*HeartVas.Cold*HeartVas.Albumin/HeartVas-k_off_toAlb*HeartVas.AlbCold) + (F_Heart/Art*Art.Albumin) - (F_Heart/HeartVas*HeartVas.Albumin)
57	d(HeartInt.Hot)/dt = (PS_Heart/HeartVas*HeartVas.Hot-PS_Heart/HeartInt*HeartInt.Hot) - (lambdaPhys*HeartInt.Hot)
58	d(HeartInt.Cold)/dt = (PS_Heart/HeartVas*HeartVas.Cold-PS_Heart/HeartInt*HeartInt.Cold) + (lambdaPhys*HeartInt.Hot)
59	d(SGVas.Hot)/dt = -(lambdaPhys*SGVas.Hot) - (k_on_toAlb*SGVas.Hot*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbHot) - (PS_SG/SGVas*SGVas.Hot-PS_SG/SGInt*SGInt.Hot) + (F_SG/Art*Art.Hot) - (F_SG/SGVas*SGVas.Hot)
60	d(SGVas.Cold)/dt = (lambdaPhys*SGVas.Hot) - (k_on_toAlb*SGVas.Cold*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbCold) - (PS_SG/SGVas*SGVas.Cold-PS_SG/SGInt*SGInt.Cold) + (F_SG/Art*Art.Cold) - (F_SG/SGVas*SGVas.Cold)
61	d(SGVas.AlbHot)/dt = (k_on_toAlb*SGVas.Hot*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbHot) - (lambdaPhys*SGVas.AlbHot) + (F_SG/Art*Art.AlbHot) - (F_SG/SGVas*SGVas.AlbHot)
62	d(SGVas.AlbCold)/dt = (lambdaPhys*SGVas.AlbHot) + (k_on_toAlb*SGVas.Cold*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbCold) + (F_SG/Art*Art.AlbCold) - (F_SG/SGVas*SGVas.AlbCold)
63	d(SGVas.Albumin)/dt = -(k_on_toAlb*SGVas.Hot*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbHot) - (k_on_toAlb*SGVas.Cold*SGVas.Albumin/SGVas-k_off_toAlb*SGVas.AlbCold) + (F_SG/Art*Art.Albumin) - (F_SG/SGVas*SGVas.Albumin)
64	d(SGInt.Hot)/dt = (PS_SG/SGVas*SGVas.Hot-PS_SG/SGInt*SGInt.Hot) - (k_on/SGInt*SGInt.Hot*SG.R-k_off*SGBound.Hot) - (lambdaPhys*SGInt.Hot)
65	d(SGInt.Cold)/dt = (PS_SG/SGVas*SGVas.Cold-PS_SG/SGInt*SGInt.Cold) - (k_on/SGInt*SGInt.Cold*SG.R-k_off*SGBound.Cold) + (lambdaPhys*SGInt.Hot)
66	d(SGBound.Hot)/dt = (k_on/SGInt*SGInt.Hot*SG.R-k_off*SGBound.Hot) - (lambdaIntern_SG*SGBound.Hot) - (lambdaPhys*SGBound.Hot)
67	d(SGBound.Cold)/dt = (k_on/SGInt*SGInt.Cold*SG.R-k_off*SGBound.Cold) - (lambdaIntern_SG*SGBound.Cold) + (lambdaPhys*SGBound.Hot)
68	d(SGIntern.Hot)/dt = (lambdaIntern_SG*SGBound.Hot) - (lambdaPhys*SGIntern.Hot) - (lambdaRel_SG*SGIntern.Hot)
69	d(SGIntern.Cold)/dt = (lambdaIntern_SG*SGBound.Cold) + (lambdaPhys*SGIntern.Hot) - (lambdaRel_SG*SGIntern.Cold)
70	d(BoneVas.Hot)/dt = -(lambdaPhys*BoneVas.Hot) - (k_on_toAlb*BoneVas.Hot*BoneVas.Albumin/BoneVas-k_off_toAlb*BoneVas.AlbHot) - (PS_Bone/BoneVas*BoneVas.Hot-PS_Bone/BoneInt*BoneInt.Hot) + (F_Bone/Art*Art.Hot) - (F_Bone/BoneVas*BoneVas.Hot)
71	d(BoneVas.Cold)/dt = (lambdaPhys*BoneVas.Hot) - (k_on_toAlb*BoneVas.Cold*BoneVas.Albumin/BoneVas-k_off_toAlb*BoneVas.AlbCold) - (PS_Bone/BoneVas*BoneVas.Cold-PS_Bone/BoneInt*BoneInt.Cold) + (F_Bone/Art*Art.Cold) - (F_Bone/BoneVas*BoneVas.Cold)
72	d(BoneVas.AlbHot)/dt = (k_on_toAlb*BoneVas.Hot*BoneVas.Albumin/BoneVas-k_off_toAlb*BoneVas.AlbHot) - (lambdaPhys*BoneVas.AlbHot) + (F_Bone/Art*Art.AlbHot) - (F_Bone/BoneVas*BoneVas.AlbHot)
73	d(BoneVas.AlbCold)/dt = (lambdaPhys*BoneVas.AlbHot) + (k_on_toAlb*BoneVas.Cold*BoneVas.Albumin/BoneVas-k_off_toAlb*BoneVas.AlbCold) + (F_Bone/Art*Art.AlbCold) - (F_Bone/BoneVas*BoneVas.AlbCold)
74	d(BoneVas.Albumin)/dt = -(k_on_toAlb*BoneVas.Hot*BoneVas.Albumin/BoneVas-k_off_toAlb*BoneVas.AlbHot) - (k_on_toAlb*BoneVas.Cold*BoneVas.Albumin/BoneVas-k_off_toAlb*BoneVas.AlbCold) + (F_Bone/Art*Art.Albumin) - (F_Bone/BoneVas*BoneVas.Albumin)
75	d(BoneInt.Hot)/dt = (PS_Bone/BoneVas*BoneVas.Hot-PS_Bone/BoneInt*BoneInt.Hot) - (lambdaPhys*BoneInt.Hot)
76	d(BoneInt.Cold)/dt = (PS_Bone/BoneVas*BoneVas.Cold-PS_Bone/BoneInt*BoneInt.Cold) + (lambdaPhys*BoneInt.Hot)
77	d(TumorRestVas.Hot)/dt = -(lambdaPhys*TumorRestVas.Hot) - (k_on_toAlb*TumorRestVas.Hot*TumorRestVas.Albumin/TumorRestVas-k_off_toAlb*TumorRestVas.AlbHot) - (PS_TumorRest/TumorRestVas*TumorRestVas.Hot-PS_TumorRest/TumorRestInt*TumorRestInt.Hot) + (F_TumorRest/Art*Art.Hot) - (F_TumorRest/TumorRestVas*TumorRestVas.Hot)
78	d(TumorRestVas.Cold)/dt = (lambdaPhys*TumorRestVas.Hot) - (k_on_toAlb*TumorRestVas.Cold*TumorRestVas.Albumin/TumorRestVas-k_off_toAlb*TumorRestVas.AlbCold) - (PS_TumorRest/TumorRestVas*TumorRestVas.Cold-PS_TumorRest/TumorRestInt*TumorRestInt.Cold) + (F_TumorRest/Art*Art.Cold) - (F_TumorRest/TumorRestVas*TumorRestVas.Cold)
79	d(TumorRestVas.AlbHot)/dt = (k_on_toAlb*TumorRestVas.Hot*TumorRestVas.Albumin/TumorRestVas-k_off_toAlb*TumorRestVas.AlbHot) - (lambdaPhys*TumorRestVas.AlbHot) - (PSAlb_TumorRest/TumorRestVas*TumorRestVas.AlbHot-PSAlb_TumorRest/TumorRestInt*TumorRestInt.AlbHot) + (F_TumorRest/Art*Art.AlbHot) - (F_TumorRest/TumorRestVas*TumorRestVas.AlbHot)
80	d(TumorRestVas.AlbCold)/dt = (lambdaPhys*TumorRestVas.AlbHot) + (k_on_toAlb*TumorRestVas.Cold*TumorRestVas.Albumin/TumorRestVas-k_off_toAlb*TumorRestVas.AlbCold) - (PSAlb_TumorRest/TumorRestVas*TumorRestVas.AlbCold-PSAlb_TumorRest/TumorRestInt*TumorRestInt.AlbCold) + (F_TumorRest/Art*Art.AlbCold) - (F_TumorRest/TumorRestVas*TumorRestVas.AlbCold)
81	d(TumorRestVas.Albumin)/dt = -(k_on_toAlb*TumorRestVas.Hot*TumorRestVas.Albumin/TumorRestVas-k_off_toAlb*TumorRestVas.AlbHot) - (k_on_toAlb*TumorRestVas.Cold*TumorRestVas.Albumin/TumorRestVas-k_off_toAlb*TumorRestVas.AlbCold) + (F_TumorRest/Art*Art.Albumin) - (F_TumorRest/TumorRestVas*TumorRestVas.Albumin) - (PSAlb_TumorRest/TumorRestVas*TumorRestVas.Albumin-PSAlb_TumorRest/TumorRestInt*TumorRestInt.Albumin)

82	$d(\text{TumorRestInt.Hot})/dt = (\text{PS_TumorRest/TumorRestVas*TumorRestVas.Hot-PS_TumorRest/TumorRestInt*TumorRestInt.Hot}) - (\text{k_on/TumorRestInt*TumorRestInt.Hot*TumorRest.R-k_off*TumorRestBound.Hot}) - (\text{lambdaPhys*TumorRestInt.Hot}) - (\text{k_on_toAlb*TumorRestInt.Hot*TumorRestInt.Albumin/TumorRestInt-k_off_toAlb*TumorRestInt.AlbHot})$
83	$d(\text{TumorRestInt.Cold})/dt = (\text{PS_TumorRest/TumorRestVas*TumorRestVas.Cold-PS_TumorRest/TumorRestInt*TumorRestInt.Cold}) - (\text{k_on/TumorRestInt*TumorRestInt.Cold*TumorRest.R-k_off*TumorRestBound.Cold}) + (\text{lambdaPhys*TumorRestInt.Hot}) - (\text{k_on_toAlb*TumorRestInt.Cold*TumorRestInt.Albumin/TumorRestInt-k_off_toAlb*TumorRestInt.AlbCold})$
84	$d(\text{TumorRestInt.AlbHot})/dt = (\text{PSAlb_TumorRest/TumorRestVas*TumorRestVas.AlbHot-PSAlb_TumorRest/TumorRestInt*TumorRestInt.AlbHot}) + (\text{k_on_toAlb*TumorRestInt.Hot*TumorRestInt.Albumin/TumorRestInt-k_off_toAlb*TumorRestInt.AlbHot}) - (\text{lambdaPhys*TumorRestInt.AlbHot})$
85	$d(\text{TumorRestInt.AlbCold})/dt = (\text{PSAlb_TumorRest/TumorRestVas*TumorRestVas.AlbCold-PSAlb_TumorRest/TumorRestInt*TumorRestInt.AlbCold}) + (\text{lambdaPhys*TumorRestInt.AlbHot}) + (\text{k_on_toAlb*TumorRestInt.Cold*TumorRestInt.Albumin/TumorRestInt-k_off_toAlb*TumorRestInt.AlbCold})$
86	$d(\text{TumorRestInt.Albumin})/dt = -(\text{k_on_toAlb*TumorRestInt.Hot*TumorRestInt.Albumin/TumorRestInt-k_off_toAlb*TumorRestInt.AlbHot}) - (\text{k_on_toAlb*TumorRestInt.Cold*TumorRestInt.Albumin/TumorRestInt-k_off_toAlb*TumorRestInt.AlbCold}) + (\text{PSAlb_TumorRest/TumorRestVas*TumorRestVas.Albumin-PSAlb_TumorRest/TumorRestInt*TumorRestInt.Albumin})$
87	$d(\text{TumorRestBound.Hot})/dt = (\text{k_on/TumorRestInt*TumorRestInt.Hot*TumorRest.R-k_off*TumorRestBound.Hot}) - (\text{lambdaIntern_TumorRest*TumorRestBound.Hot}) - (\text{lambdaPhys*TumorRestBound.Hot})$
88	$d(\text{TumorRestBound.Cold})/dt = (\text{k_on/TumorRestInt*TumorRestInt.Cold*TumorRest.R-k_off*TumorRestBound.Cold}) - (\text{lambdaIntern_TumorRest*TumorRestBound.Cold}) + (\text{lambdaPhys*TumorRestBound.Hot})$
89	$d(\text{TumorRestIntern.Hot})/dt = (\text{lambdaIntern_TumorRest*TumorRestBound.Hot}) - (\text{lambdaPhys*TumorRestIntern.Hot}) - (\text{lambdaRel_TumorRest*TumorRestIntern.Hot})$
90	$d(\text{TumorRestIntern.Cold})/dt = (\text{lambdaIntern_TumorRest*TumorRestBound.Cold}) + (\text{lambdaPhys*TumorRestIntern.Hot}) - (\text{lambdaRel_TumorRest*TumorRestIntern.Cold})$
91	$d(\text{SpleenVas.Hot})/dt = -(\text{lambdaPhys*SpleenVas.Hot}) - (\text{k_on_toAlb*SpleenVas.Hot*SpleenVas.Albumin/SpleenVas-k_off_toAlb*SpleenVas.AlbHot}) - (\text{PS_Spleen/SpleenVas*SpleenVas.Hot-PS_Spleen/SpleenInt*SpleenInt.Hot}) + (\text{F_Spleen/Art*Art.Hot}) - (\text{F_Spleen/SpleenVas*SpleenVas.Hot})$
92	$d(\text{SpleenVas.Cold})/dt = (\text{lambdaPhys*SpleenVas.Hot}) - (\text{k_on_toAlb*SpleenVas.Cold*SpleenVas.Albumin/SpleenVas-k_off_toAlb*SpleenVas.AlbCold}) - (\text{PS_Spleen/SpleenVas*SpleenVas.Cold-PS_Spleen/SpleenInt*SpleenInt.Cold}) + (\text{F_Spleen/Art*Art.Cold}) - (\text{F_Spleen/SpleenVas*SpleenVas.Cold})$
93	$d(\text{SpleenVas.AlbHot})/dt = (\text{k_on_toAlb*SpleenVas.Hot*SpleenVas.Albumin/SpleenVas-k_off_toAlb*SpleenVas.AlbHot}) - (\text{lambdaPhys*SpleenVas.AlbHot}) + (\text{F_Spleen/Art*Art.AlbHot}) - (\text{F_Spleen/SpleenVas*SpleenVas.AlbHot})$
94	$d(\text{SpleenVas.AlbCold})/dt = (\text{lambdaPhys*SpleenVas.AlbHot}) + (\text{k_on_toAlb*SpleenVas.Cold*SpleenVas.Albumin/SpleenVas-k_off_toAlb*SpleenVas.AlbCold}) + (\text{F_Spleen/Art*Art.AlbCold}) - (\text{F_Spleen/SpleenVas*SpleenVas.AlbCold})$
95	$d(\text{SpleenVas.Albumin})/dt = -(\text{k_on_toAlb*SpleenVas.Hot*SpleenVas.Albumin/SpleenVas-k_off_toAlb*SpleenVas.AlbHot}) - (\text{k_on_toAlb*SpleenVas.Cold*SpleenVas.Albumin/SpleenVas-k_off_toAlb*SpleenVas.AlbCold}) + (\text{F_Spleen/Art*Art.Albumin}) - (\text{F_Spleen/SpleenVas*SpleenVas.Albumin})$
96	$d(\text{SpleenInt.Hot})/dt = (\text{PS_Spleen/SpleenVas*SpleenVas.Hot-PS_Spleen/SpleenInt*SpleenInt.Hot}) - (\text{k_on/SpleenInt*SpleenInt.Hot*Spleen.R-k_off*SpleenBound.Hot}) - (\text{lambdaPhys*SpleenInt.Hot})$
97	$d(\text{SpleenInt.Cold})/dt = (\text{PS_Spleen/SpleenVas*SpleenVas.Cold-PS_Spleen/SpleenInt*SpleenInt.Cold}) - (\text{k_on/SpleenInt*SpleenInt.Cold*Spleen.R-k_off*SpleenBound.Cold}) + (\text{lambdaPhys*SpleenInt.Hot})$
98	$d(\text{SpleenBound.Hot})/dt = (\text{k_on/SpleenInt*SpleenInt.Hot*Spleen.R-k_off*SpleenBound.Hot}) - (\text{lambdaIntern_Spleen*SpleenBound.Hot}) - (\text{lambdaPhys*SpleenBound.Hot})$
99	$d(\text{SpleenBound.Cold})/dt = (\text{k_on/SpleenInt*SpleenInt.Cold*Spleen.R-k_off*SpleenBound.Cold}) - (\text{lambdaIntern_Spleen*SpleenBound.Cold}) + (\text{lambdaPhys*SpleenBound.Hot})$
100	$d(\text{SpleenIntern.Hot})/dt = (\text{lambdaIntern_Spleen*SpleenBound.Hot}) - (\text{lambdaPhys*SpleenIntern.Hot}) - (\text{lambdaRel_Spleen*SpleenIntern.Hot})$
101	$d(\text{SpleenIntern.Cold})/dt = (\text{lambdaIntern_Spleen*SpleenBound.Cold}) + (\text{lambdaPhys*SpleenIntern.Hot}) - (\text{lambdaRel_Spleen*SpleenIntern.Cold})$
102	$d(\text{LiverVas.Hot})/dt = -(\text{lambdaPhys*LiverVas.Hot}) - (\text{k_on_toAlb*LiverVas.Hot*LiverVas.Albumin/LiverVas-k_off_toAlb*LiverVas.AlbHot}) - (\text{PS_Liver/LiverVas*LiverVas.Hot-PS_Liver/LiverInt*LiverInt.Hot}) + (\text{F_Liver/Art*Art.Hot}) - (\text{F_Liver/LiverVas*LiverVas.Hot}) + (\text{F_Spleen/SpleenVas*SpleenVas.Hot}) + (\text{F_GI/GIVas*GIVas.Hot})$
103	$d(\text{LiverVas.Cold})/dt = (\text{lambdaPhys*LiverVas.Hot}) - (\text{k_on_toAlb*LiverVas.Cold*LiverVas.Albumin/LiverVas-k_off_toAlb*LiverVas.AlbCold}) - (\text{PS_Liver/LiverVas*LiverVas.Cold-PS_Liver/LiverInt*LiverInt.Cold}) + (\text{F_Liver/Art*Art.Cold}) - (\text{F_Liver/LiverVas*LiverVas.Cold}) + (\text{F_Spleen/SpleenVas*SpleenVas.Cold}) + (\text{F_GI/GIVas*GIVas.Cold})$
104	$d(\text{LiverVas.AlbHot})/dt = (\text{k_on_toAlb*LiverVas.Hot*LiverVas.Albumin/LiverVas-k_off_toAlb*LiverVas.AlbHot}) - (\text{lambdaPhys*LiverVas.AlbHot}) + (\text{F_Liver/Art*Art.AlbHot}) - (\text{F_Liver/LiverVas*LiverVas.AlbHot}) + (\text{F_Spleen/SpleenVas*SpleenVas.AlbHot}) + (\text{F_GI/GIVas*GIVas.AlbHot})$
105	$d(\text{LiverVas.AlbCold})/dt = (\text{lambdaPhys*LiverVas.AlbHot}) + (\text{k_on_toAlb*LiverVas.Cold*LiverVas.Albumin/LiverVas-k_off_toAlb*LiverVas.AlbCold}) + (\text{F_Liver/Art*Art.AlbCold}) - (\text{F_Liver/LiverVas*LiverVas.AlbCold}) + (\text{F_Spleen/SpleenVas*SpleenVas.AlbCold}) + (\text{F_GI/GIVas*GIVas.AlbCold})$
106	$d(\text{LiverVas.Albumin})/dt = -(\text{k_on_toAlb*LiverVas.Hot*LiverVas.Albumin/LiverVas-k_off_toAlb*LiverVas.AlbHot}) - (\text{k_on_toAlb*LiverVas.Cold*LiverVas.Albumin/LiverVas-k_off_toAlb*LiverVas.AlbCold}) + (\text{F_Liver/Art*Art.Albumin}) - (\text{F_Liver/LiverVas*LiverVas.Albumin})$
107	$d(\text{LiverInt.Hot})/dt = (\text{PS_Liver/LiverVas*LiverVas.Hot-PS_Liver/LiverInt*LiverInt.Hot}) - (\text{k_on/LiverInt*LiverInt.Hot*Liver.R-k_off*LiverBound.Hot}) - (\text{lambdaPhys*LiverInt.Hot})$
108	$d(\text{LiverInt.Cold})/dt = (\text{PS_Liver/LiverVas*LiverVas.Cold-PS_Liver/LiverInt*LiverInt.Cold}) - (\text{k_on/LiverInt*LiverInt.Cold*Liver.R-k_off*LiverBound.Cold}) + (\text{lambdaPhys*LiverInt.Hot})$
109	$d(\text{LiverBound.Hot})/dt = (\text{k_on/LiverInt*LiverInt.Hot*Liver.R-k_off*LiverBound.Hot}) - (\text{lambdaIntern_Liver*LiverBound.Hot}) - (\text{lambdaPhys*LiverBound.Hot})$
110	$d(\text{LiverBound.Cold})/dt = (\text{k_on/LiverInt*LiverInt.Cold*Liver.R-k_off*LiverBound.Cold}) - (\text{lambdaIntern_Liver*LiverBound.Cold}) + (\text{lambdaPhys*LiverBound.Hot})$
111	$d(\text{LiverIntern.Hot})/dt = (\text{lambdaIntern_Liver*LiverBound.Hot}) - (\text{lambdaPhys*LiverIntern.Hot}) - (\text{lambdaRel_Liver*LiverIntern.Hot})$

112	$d(\text{LiverIntern.Cold})/dt = (\text{lambdaIntern_Liver*LiverBound.Cold}) + (\text{lambdaPhys*LiverIntern.Hot}) - (\text{lambdaRel_Liver*LiverIntern.Cold})$
113	$d(\text{ProstateVas.Hot})/dt = -(\text{lambdaPhys*ProstateVas.Hot}) - (\text{k_on_toAlb*ProstateVas.Hot*ProstateVas.Albumin/ProstateVas-k_off_toAlb*ProstateVas.AlbHot}) - (\text{PS_Prostate/ProstateVas*ProstateVas.Hot-PS_Prostate/ProstateInt*ProstateInt.Hot}) + (\text{F_Prostate/Art*Art.Hot}) - (\text{F_Prostate/ProstateVas*ProstateVas.Hot})$
114	$d(\text{ProstateVas.Cold})/dt = (\text{lambdaPhys*ProstateVas.Hot}) - (\text{k_on_toAlb*ProstateVas.Cold*ProstateVas.Albumin/ProstateVas-k_off_toAlb*ProstateVas.AlbCold}) - (\text{PS_Prostate/ProstateVas*ProstateVas.Cold-PS_Prostate/ProstateInt*ProstateInt.Cold}) + (\text{F_Prostate/Art*Art.Cold}) - (\text{F_Prostate/ProstateVas*ProstateVas.Cold})$
115	$d(\text{ProstateVas.AlbHot})/dt = (\text{k_on_toAlb*ProstateVas.Hot*ProstateVas.Albumin/ProstateVas-k_off_toAlb*ProstateVas.AlbHot}) - (\text{lambdaPhys*ProstateVas.AlbHot}) + (\text{F_Prostate/Art*Art.AlbHot}) - (\text{F_Prostate/ProstateVas*ProstateVas.AlbHot})$
116	$d(\text{ProstateVas.AlbCold})/dt = (\text{lambdaPhys*ProstateVas.AlbHot}) + (\text{k_on_toAlb*ProstateVas.Cold*ProstateVas.Albumin/ProstateVas-k_off_toAlb*ProstateVas.AlbCold}) + (\text{F_Prostate/Art*Art.AlbCold}) - (\text{F_Prostate/ProstateVas*ProstateVas.AlbCold})$
117	$d(\text{ProstateVas.Albumin})/dt = -(\text{k_on_toAlb*ProstateVas.Hot*ProstateVas.Albumin/ProstateVas-k_off_toAlb*ProstateVas.AlbHot}) - (\text{k_on_toAlb*ProstateVas.Cold*ProstateVas.Albumin/ProstateVas-k_off_toAlb*ProstateVas.AlbCold}) + (\text{F_Prostate/Art*Art.Albumin}) - (\text{F_Prostate/ProstateVas*ProstateVas.Albumin})$
118	$d(\text{ProstateInt.Hot})/dt = (\text{PS_Prostate/ProstateVas*ProstateVas.Hot-PS_Prostate/ProstateInt*ProstateInt.Hot}) - (\text{k_on/ProstateInt*ProstateInt.Hot*Prostate.R-k_off*ProstateBound.Hot}) - (\text{lambdaPhys*ProstateInt.Hot})$
119	$d(\text{ProstateInt.Cold})/dt = (\text{PS_Prostate/ProstateVas*ProstateVas.Cold-PS_Prostate/ProstateInt*ProstateInt.Cold}) - (\text{k_on/ProstateInt*ProstateInt.Cold*Prostate.R-k_off*ProstateBound.Cold}) + (\text{lambdaPhys*ProstateInt.Hot})$
120	$d(\text{ProstateBound.Hot})/dt = (\text{k_on/ProstateInt*ProstateInt.Hot*Prostate.R-k_off*ProstateBound.Hot}) - (\text{lambdaIntern_Prostate*ProstateBound.Hot}) - (\text{lambdaPhys*ProstateBound.Hot})$
121	$d(\text{ProstateBound.Cold})/dt = (\text{k_on/ProstateInt*ProstateInt.Cold*Prostate.R-k_off*ProstateBound.Cold}) - (\text{lambdaIntern_Prostate*ProstateBound.Cold}) + (\text{lambdaPhys*ProstateBound.Hot})$
122	$d(\text{ProstateIntern.Hot})/dt = (\text{lambdaIntern_Prostate*ProstateBound.Hot}) - (\text{lambdaPhys*ProstateIntern.Hot}) - (\text{lambdaRel_Prostate*ProstateIntern.Hot})$
123	$d(\text{ProstateIntern.Cold})/dt = (\text{lambdaIntern_Prostate*ProstateBound.Cold}) + (\text{lambdaPhys*ProstateIntern.Hot}) - (\text{lambdaRel_Prostate*ProstateIntern.Cold})$
124	$d(\text{GIVas.Hot})/dt = -(\text{lambdaPhys*GIVas.Hot}) - (\text{k_on_toAlb*GIVas.Hot*GIVas.Albumin/GIVas-k_off_toAlb*GIVas.AlbHot}) - (\text{PS_GI/GIVas*GIVas.Hot-PS_GI/GIInt*GIInt.Hot}) + (\text{F_GI/Art*Art.Hot}) - (\text{F_GI/GIVas*GIVas.Hot})$
125	$d(\text{GIVas.Cold})/dt = (\text{lambdaPhys*GIVas.Hot}) - (\text{k_on_toAlb*GIVas.Cold*GIVas.Albumin/GIVas-k_off_toAlb*GIVas.AlbCold}) - (\text{PS_GI/GIVas*GIVas.Cold-PS_GI/GIInt*GIInt.Cold}) + (\text{F_GI/Art*Art.Cold}) - (\text{F_GI/GIVas*GIVas.Cold})$
126	$d(\text{GIVas.AlbHot})/dt = (\text{k_on_toAlb*GIVas.Hot*GIVas.Albumin/GIVas-k_off_toAlb*GIVas.AlbHot}) - (\text{lambdaPhys*GIVas.AlbHot}) + (\text{F_GI/Art*Art.AlbHot}) - (\text{F_GI/GIVas*GIVas.AlbHot})$
127	$d(\text{GIVas.AlbCold})/dt = (\text{lambdaPhys*GIVas.AlbHot}) + (\text{k_on_toAlb*GIVas.Cold*GIVas.Albumin/GIVas-k_off_toAlb*GIVas.AlbCold}) + (\text{F_GI/Art*Art.AlbCold}) - (\text{F_GI/GIVas*GIVas.AlbCold})$
128	$d(\text{GIVas.Albumin})/dt = -(\text{k_on_toAlb*GIVas.Hot*GIVas.Albumin/GIVas-k_off_toAlb*GIVas.AlbHot}) - (\text{k_on_toAlb*GIVas.Cold*GIVas.Albumin/GIVas-k_off_toAlb*GIVas.AlbCold}) + (\text{F_GI/Art*Art.Albumin}) - (\text{F_GI/GIVas*GIVas.Albumin})$
129	$d(\text{GIInt.Hot})/dt = (\text{PS_GI/GIVas*GIVas.Hot-PS_GI/GIInt*GIInt.Hot}) - (\text{k_on/GIInt*GIInt.Hot*GI.R-k_off*GIBound.Hot}) - (\text{lambdaPhys*GIInt.Hot})$
130	$d(\text{GIInt.Cold})/dt = (\text{PS_GI/GIVas*GIVas.Cold-PS_GI/GIInt*GIInt.Cold}) - (\text{k_on/GIInt*GIInt.Cold*GI.R-k_off*GIBound.Cold}) + (\text{lambdaPhys*GIInt.Hot})$
131	$d(\text{GIBound.Hot})/dt = (\text{k_on/GIInt*GIInt.Hot*GI.R-k_off*GIBound.Hot}) - (\text{lambdaIntern_GI*GIBound.Hot}) - (\text{lambdaPhys*GIBound.Hot})$
132	$d(\text{GIBound.Cold})/dt = (\text{k_on/GIInt*GIInt.Cold*GI.R-k_off*GIBound.Cold}) - (\text{lambdaIntern_GI*GIBound.Cold}) + (\text{lambdaPhys*GIBound.Hot})$
133	$d(\text{GIIntern.Hot})/dt = (\text{lambdaIntern_GI*GIBound.Hot}) - (\text{lambdaPhys*GIIntern.Hot}) - (\text{lambdaRel_GI*GIIntern.Hot})$
134	$d(\text{GIIntern.Cold})/dt = (\text{lambdaIntern_GI*GIBound.Cold}) + (\text{lambdaPhys*GIIntern.Hot}) - (\text{lambdaRel_GI*GIIntern.Cold})$
135	$d(\text{RestVas.Hot})/dt = -(\text{lambdaPhys*RestVas.Hot}) - (\text{k_on_toAlb*RestVas.Hot*RestVas.Albumin/RestVas-k_off_toAlb*RestVas.AlbHot}) - (\text{PS_Rest/RestVas*RestVas.Hot-PS_Rest/RestInt*RestInt.Hot}) + (\text{F_Rest/Art*Art.Hot}) - (\text{F_Rest/RestVas*RestVas.Hot})$
136	$d(\text{RestVas.Cold})/dt = (\text{lambdaPhys*RestVas.Hot}) - (\text{k_on_toAlb*RestVas.Cold*RestVas.Albumin/RestVas-k_off_toAlb*RestVas.AlbCold}) - (\text{PS_Rest/RestVas*RestVas.Cold-PS_Rest/RestInt*RestInt.Cold}) + (\text{F_Rest/Art*Art.Cold}) - (\text{F_Rest/RestVas*RestVas.Cold})$
137	$d(\text{RestVas.AlbHot})/dt = (\text{k_on_toAlb*RestVas.Hot*RestVas.Albumin/RestVas-k_off_toAlb*RestVas.AlbHot}) - (\text{lambdaPhys*RestVas.AlbHot}) + (\text{F_Rest/Art*Art.AlbHot}) - (\text{F_Rest/RestVas*RestVas.AlbHot})$
138	$d(\text{RestVas.AlbCold})/dt = (\text{lambdaPhys*RestVas.AlbHot}) + (\text{k_on_toAlb*RestVas.Cold*RestVas.Albumin/RestVas-k_off_toAlb*RestVas.AlbCold}) + (\text{F_Rest/Art*Art.AlbCold}) - (\text{F_Rest/RestVas*RestVas.AlbCold})$
139	$d(\text{RestVas.Albumin})/dt = -(\text{k_on_toAlb*RestVas.Hot*RestVas.Albumin/RestVas-k_off_toAlb*RestVas.AlbHot}) - (\text{k_on_toAlb*RestVas.Cold*RestVas.Albumin/RestVas-k_off_toAlb*RestVas.AlbCold}) + (\text{F_Rest/Art*Art.Albumin}) - (\text{F_Rest/RestVas*RestVas.Albumin})$
140	$d(\text{RestInt.Hot})/dt = (\text{PS_Rest/RestVas*RestVas.Hot-PS_Rest/RestInt*RestInt.Hot}) - (\text{lambdaPhys*RestInt.Hot})$
141	$d(\text{RestInt.Cold})/dt = (\text{PS_Rest/RestVas*RestVas.Cold-PS_Rest/RestInt*RestInt.Cold}) + (\text{lambdaPhys*RestInt.Hot})$
142	$d(\text{SkinVas.Hot})/dt = -(\text{lambdaPhys*SkinVas.Hot}) - (\text{k_on_toAlb*SkinVas.Hot*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbHot}) - (\text{PS_Skin/SkinVas*SkinVas.Hot-PS_Skin/SkinVas*SkinInt.Hot}) + (\text{F_Skin/Art*Art.Hot}) - (\text{F_Skin/SkinVas*SkinVas.Hot})$
143	$d(\text{SkinVas.Cold})/dt = (\text{lambdaPhys*SkinVas.Hot}) - (\text{k_on_toAlb*SkinVas.Cold*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbCold}) - (\text{PS_Skin/SkinVas*SkinVas.Cold-PS_Skin/SkinInt*SkinInt.Cold}) + (\text{F_Skin/Art*Art.Cold}) - (\text{F_Skin/SkinVas*SkinVas.Cold})$
144	$d(\text{SkinVas.AlbHot})/dt = (\text{k_on_toAlb*SkinVas.Hot*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbHot}) - (\text{lambdaPhys*SkinVas.AlbHot}) + (\text{F_Skin/Art*Art.AlbHot}) - (\text{F_Skin/SkinVas*SkinVas.AlbHot})$
145	$d(\text{SkinVas.AlbCold})/dt = (\text{lambdaPhys*SkinVas.AlbHot}) + (\text{k_on_toAlb*SkinVas.Cold*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbCold}) + (\text{F_Skin/Art*Art.AlbCold}) - (\text{F_Skin/SkinVas*SkinVas.AlbCold})$
146	$d(\text{SkinVas.Albumin})/dt = -(\text{k_on_toAlb*SkinVas.Hot*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbHot}) - (\text{k_on_toAlb*SkinVas.Cold*SkinVas.Albumin/SkinVas-k_off_toAlb*SkinVas.AlbCold}) + (\text$

147	$d(\text{SkinInt.Hot})/dt = (\text{PS_Skin/SkinVas*SkinVas.Hot-PS_Skin/SkinVas*SkinInt.Hot}) - (\text{lambdaPhys*SkinInt.Hot})$
148	$d(\text{SkinInt.Cold})/dt = (\text{PS_Skin/SkinVas*SkinVas.Cold-PS_Skin/SkinInt*SkinInt.Cold}) + (\text{lambdaPhys*SkinInt.Hot})$
149	$d(\text{MuscleVas.Hot})/dt = -(\text{lambdaPhys*MuscleVas.Hot}) - (\text{k_on_toAlb*MuscleVas.Hot*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbHot}) - (\text{PS_Muscle/MuscleVas*MuscleVas.Hot-PS_Muscle/MuscleInt*MuscleInt.Hot}) + (\text{F_Muscle/Art*Art.Hot}) - (\text{F_Muscle/MuscleVas*MuscleVas.Hot})$
150	$d(\text{MuscleVas.Cold})/dt = (\text{lambdaPhys*MuscleVas.Hot}) - (\text{k_on_toAlb*MuscleVas.Cold*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbCold}) - (\text{PS_Muscle/MuscleVas*MuscleVas.Cold-PS_Muscle/MuscleInt*MuscleInt.Cold}) + (\text{F_Muscle/Art*Art.Cold}) - (\text{F_Muscle/MuscleVas*MuscleVas.Cold})$
151	$d(\text{MuscleVas.AlbHot})/dt = (\text{k_on_toAlb*MuscleVas.Hot*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbHot}) - (\text{lambdaPhys*MuscleVas.AlbHot}) + (\text{F_Muscle/Art*Art.AlbHot}) - (\text{F_Muscle/MuscleVas*MuscleVas.AlbHot})$
152	$d(\text{MuscleVas.AlbCold})/dt = (\text{lambdaPhys*MuscleVas.AlbHot}) + (\text{k_on_toAlb*MuscleVas.Cold*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbCold}) + (\text{F_Muscle/Art*Art.AlbCold}) - (\text{F_Muscle/MuscleVas*MuscleVas.AlbCold})$
153	$d(\text{MuscleVas.Albumin})/dt = -(\text{k_on_toAlb*MuscleVas.Hot*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbHot}) - (\text{k_on_toAlb*MuscleVas.Cold*MuscleVas.Albumin/MuscleVas-k_off_toAlb*MuscleVas.AlbCold}) + (\text{F_Muscle/Art*Art.Albumin}) - (\text{F_Muscle/MuscleVas*MuscleVas.Albumin})$
154	$d(\text{MuscleInt.Hot})/dt = (\text{PS_Muscle/MuscleVas*MuscleVas.Hot-PS_Muscle/MuscleInt*MuscleInt.Hot}) - (\text{lambdaPhys*MuscleInt.Hot})$
155	$d(\text{MuscleInt.Cold})/dt = (\text{PS_Muscle/MuscleVas*MuscleVas.Cold-PS_Muscle/MuscleInt*MuscleInt.Cold}) + (\text{lambdaPhys*MuscleInt.Hot})$
156	$d(\text{BrainVas.Hot})/dt = -(\text{lambdaPhys*BrainVas.Hot}) - (\text{k_on_toAlb*BrainVas.Hot*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbHot}) - (\text{PS_Brain/BrainVas*BrainVas.Hot-PS_Brain/BrainInt*BrainInt.Hot}) + (\text{F_Brain/Art*Art.Hot}) - (\text{F_Brain/BrainVas*BrainVas.Hot})$
157	$d(\text{BrainVas.Cold})/dt = (\text{lambdaPhys*BrainVas.Hot}) - (\text{k_on_toAlb*BrainVas.Cold*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbCold}) - (\text{PS_Brain/BrainVas*BrainVas.Cold-PS_Brain/BrainInt*BrainInt.Cold}) + (\text{F_Brain/Art*Art.Cold}) - (\text{F_Brain/BrainVas*BrainVas.Cold})$
158	$d(\text{BrainVas.AlbHot})/dt = (\text{k_on_toAlb*BrainVas.Hot*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbHot}) - (\text{lambdaPhys*BrainVas.AlbHot}) + (\text{F_Brain/Art*Art.AlbHot}) - (\text{F_Brain/BrainVas*BrainVas.AlbHot})$
159	$d(\text{BrainVas.AlbCold})/dt = (\text{lambdaPhys*BrainVas.AlbHot}) + (\text{k_on_toAlb*BrainVas.Cold*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbCold}) + (\text{F_Brain/Art*Art.AlbCold}) - (\text{F_Brain/BrainVas*BrainVas.AlbCold})$
160	$d(\text{BrainVas.Albumin})/dt = -(\text{k_on_toAlb*BrainVas.Hot*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbHot}) - (\text{k_on_toAlb*BrainVas.Cold*BrainVas.Albumin/BrainVas-k_off_toAlb*BrainVas.AlbCold}) + (\text{F_Brain/Art*Art.Albumin}) - (\text{F_Brain/BrainVas*BrainVas.Albumin})$
161	$d(\text{BrainInt.Hot})/dt = (\text{PS_Brain/BrainVas*BrainVas.Hot-PS_Brain/BrainInt*BrainInt.Hot}) - (\text{lambdaPhys*BrainInt.Hot})$
162	$d(\text{BrainInt.Cold})/dt = (\text{PS_Brain/BrainVas*BrainVas.Cold-PS_Brain/BrainInt*BrainInt.Cold}) + (\text{lambdaPhys*BrainInt.Hot})$
163	$d(\text{RedMarrowVas.Hot})/dt = -(\text{lambdaPhys*RedMarrowVas.Hot}) - (\text{k_on_toAlb*RedMarrowVas.Hot*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbHot}) - (\text{PS_RedMarrow/RedMarrowVas*RedMarrowVas.Hot-PS_RedMarrow/RedMarrowInt*RedMarrowInt.Hot}) + (\text{F_RedMarrow/Art*Art.Hot}) - (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.Hot})$
164	$d(\text{RedMarrowVas.Cold})/dt = (\text{lambdaPhys*RedMarrowVas.Hot}) - (\text{k_on_toAlb*RedMarrowVas.Cold*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbCold}) - (\text{PS_RedMarrow/RedMarrowVas*RedMarrowVas.Cold-PS_RedMarrow/RedMarrowInt*RedMarrowInt.Cold}) + (\text{F_RedMarrow/Art*Art.Cold}) - (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.Cold})$
165	$d(\text{RedMarrowVas.AlbHot})/dt = (\text{k_on_toAlb*RedMarrowVas.Hot*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbHot}) - (\text{lambdaPhys*RedMarrowVas.AlbHot}) + (\text{F_RedMarrow/Art*Art.AlbHot}) - (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.AlbHot})$
166	$d(\text{RedMarrowVas.AlbCold})/dt = (\text{lambdaPhys*RedMarrowVas.AlbHot}) + (\text{k_on_toAlb*RedMarrowVas.Cold*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbCold}) + (\text{F_RedMarrow/Art*Art.AlbCold}) - (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.AlbCold})$
167	$d(\text{RedMarrowVas.Albumin})/dt = -(\text{k_on_toAlb*RedMarrowVas.Hot*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbHot}) - (\text{k_on_toAlb*RedMarrowVas.Cold*RedMarrowVas.Albumin/RedMarrowVas-k_off_toAlb*RedMarrowVas.AlbCold}) + (\text{F_RedMarrow/Art*Art.Albumin}) - (\text{F_RedMarrow/RedMarrowVas*RedMarrowVas.Albumin})$
168	$d(\text{RedMarrowInt.Hot})/dt = (\text{PS_RedMarrow/RedMarrowVas*RedMarrowVas.Hot-PS_RedMarrow/RedMarrowInt*RedMarrowInt.Hot}) - (\text{lambdaPhys*RedMarrowInt.Hot})$
169	$d(\text{RedMarrowInt.Cold})/dt = (\text{PS_RedMarrow/RedMarrowVas*RedMarrowVas.Cold-PS_RedMarrow/RedMarrowInt*RedMarrowInt.Cold}) + (\text{lambdaPhys*RedMarrowInt.Hot})$
170	$d(\text{LungsVas.Hot})/dt = -(\text{lambdaPhys*LungsVas.Hot}) - (\text{k_on_toAlb*LungsVas.Hot*LungsVas.Albumin/LungsVas-k_off_toAlb*LungsVas.AlbHot}) - (\text{PS_Lungs/LungsVas*LungsVas.Hot-PS_Lungs/LungsInt*LungsInt.Hot}) - (\text{F_Lungs/LungsVas*LungsVas.Hot}) + (\text{F_Lungs/Vein*Vein.Hot})$
171	$d(\text{LungsVas.Cold})/dt = (\text{lambdaPhys*LungsVas.Hot}) - (\text{k_on_toAlb*LungsVas.Cold*LungsVas.Albumin/LungsVas-k_off_toAlb*LungsVas.AlbCold}) - (\text{PS_Lungs/LungsVas*LungsVas.Cold-PS_Lungs/LungsInt*LungsInt.Cold}) - (\text{F_Lungs/LungsVas*LungsVas.Cold}) + (\text{F_Lungs/Vein*Vein.Cold})$
172	$d(\text{LungsVas.AlbHot})/dt = (\text{k_on_toAlb*LungsVas.Hot*LungsVas.Albumin/LungsVas-k_off_toAlb*LungsVas.AlbHot}) - (\text{lambdaPhys*LungsVas.AlbHot}) - (\text{F_Lungs/LungsVas*LungsVas.AlbHot}) + (\text{F_Lungs/Vein*Vein.AlbHot})$
173	$d(\text{LungsVas.AlbCold})/dt = (\text{lambdaPhys*LungsVas.AlbHot}) + (\text{k_on_toAlb*LungsVas.Cold*LungsVas.Albumin/LungsVas-k_off_toAlb*LungsVas.AlbCold}) - (\text{F_Lungs/LungsVas*LungsVas.AlbCold}) + (\text{F_Lungs/Vein*Vein.AlbCold})$
174	$d(\text{LungsVas.Albumin})/dt = -(\text{k_on_toAlb*LungsVas.Hot*LungsVas.Albumin/LungsVas-k_off_toAlb*LungsVas.AlbHot}) - (\text{k_on_toAlb*LungsVas.Cold*LungsVas.Albumin/LungsVas-k_off_toAlb*LungsVas.AlbCold}) + (\text{F_Lungs/Vein*Vein.Albumin}) - (\text{F_Lungs/LungsVas*LungsVas.Albumin})$
175	$d(\text{LungsInt.Hot})/dt = (\text{PS_Lungs/LungsVas*LungsVas.Hot-PS_Lungs/LungsInt*LungsInt.Hot}) - (\text{lambdaPhys*LungsInt.Hot})$
176	$d(\text{LungsInt.Cold})/dt = (\text{PS_Lungs/LungsVas*LungsVas.Cold-PS_Lungs/LungsInt*LungsInt.Cold}) + (\text{lambdaPhys*LungsInt.Hot})$
177	$d(\text{AdiposeVas.Hot})/dt = -(\text{lambdaPhys*AdiposeVas.Hot}) - (\text{k_on_toAlb*AdiposeVas.Hot*AdiposeVas.Albumin/AdiposeVas-k_off_toAlb*AdiposeVas.AlbHot}) - (\text{PS_Adipose/AdiposeVas*AdiposeVas.Hot-PS_Adipose/AdiposeInt*AdiposeInt.Hot}) + (\text{F_Adipose/Art*Art.Hot}) - (\text{F_Adipose/AdiposeVas*AdiposeVas.Hot})$
	$d(\text{AdiposeVas.Cold})/dt = (\text{lambdaPhys*AdiposeVas.Hot}) - (\text{k_on_toAlb*AdiposeVas.Cold*AdiposeVas.Albumin/AdiposeVas-k_off_toAlb*AdiposeVas.AlbCold}) - (\text{PS_Adipose/AdiposeVas*AdiposeVas.Cold-PS_Adipose/AdiposeInt*AdiposeInt.Cold}) + (\text{F_Adipose/Art*Art.Cold}) - (\text{F_Adipose/AdiposeVas*AdiposeVas.Cold})$

178	$k_{\text{off_toAlb}} \cdot \text{AdiposeVas.AlbCold} - (\text{PS_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.Cold} - \text{PS_Adipose} / \text{AdiposeInt} \cdot \text{AdiposeInt.Cold}) + (\text{F_Adipose} / \text{Art} \cdot \text{Art.Cold}) - (\text{F_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.Cold})$
179	$d(\text{AdiposeVas.AlbHot})/dt = (k_{\text{on_toAlb}} \cdot \text{AdiposeVas.Hot} \cdot \text{AdiposeVas.Albumin} / \text{AdiposeVas} - k_{\text{off_toAlb}} \cdot \text{AdiposeVas.AlbHot}) - (\text{lambdaPhys} \cdot \text{AdiposeVas.AlbHot}) + (\text{F_Adipose} / \text{Art} \cdot \text{Art.AlbHot}) - (\text{F_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.AlbHot})$
180	$d(\text{AdiposeVas.AlbCold})/dt = (\text{lambdaPhys} \cdot \text{AdiposeVas.AlbHot}) + (k_{\text{on_toAlb}} \cdot \text{AdiposeVas.Cold} \cdot \text{AdiposeVas.Albumin} / \text{AdiposeVas} - k_{\text{off_toAlb}} \cdot \text{AdiposeVas.AlbCold}) + (\text{F_Adipose} / \text{Art} \cdot \text{Art.AlbCold}) - (\text{F_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.AlbCold})$
181	$d(\text{AdiposeVas.Albumin})/dt = -(k_{\text{on_toAlb}} \cdot \text{AdiposeVas.Hot} \cdot \text{AdiposeVas.Albumin} / \text{AdiposeVas} - k_{\text{off_toAlb}} \cdot \text{AdiposeVas.AlbHot}) - (k_{\text{on_toAlb}} \cdot \text{AdiposeVas.Cold} \cdot \text{AdiposeVas.Albumin} / \text{AdiposeVas} - k_{\text{off_toAlb}} \cdot \text{AdiposeVas.AlbCold}) + (\text{F_Adipose} / \text{Art} \cdot \text{Art.Albumin}) - (\text{F_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.Albumin})$
182	$d(\text{AdiposeInt.Hot})/dt = (\text{PS_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.Hot} - \text{PS_Adipose} / \text{AdiposeInt} \cdot \text{AdiposeInt.Hot}) - (\text{lambdaPhys} \cdot \text{AdiposeInt.Hot})$
183	$d(\text{AdiposeInt.Cold})/dt = (\text{PS_Adipose} / \text{AdiposeVas} \cdot \text{AdiposeVas.Cold} - \text{PS_Adipose} / \text{AdiposeInt} \cdot \text{AdiposeInt.Cold}) + (\text{lambdaPhys} \cdot \text{AdiposeInt.Hot})$

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