## Open Systems Pharmacology Suite - 12 Installation Validation

User1

February 7, 2025

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## Chapter 1

## Installation Validation Results

#### **Overall Validation Result**

Valid

## 1.1 Validation Summary

### Run Duration

Start time: 2025-02-07 01:45 End time: 2025-02-07 02:33

Validation performed in 48m:07s:500ms

#### Input Configuration Folder

 $C: \label{lem:condition} C: \label{lem:condition} Pharmacology \label{lem:condition} In tallation \label{lem:condition} Validator \label{lem:condition} 12.0 \label{lem:condition} In puts \label{lem:condition} Batch Files \label{lem:condition} Files \label{lem:condition} Pharmacology \label{lem$ 

#### **Local Outputs Location**

## **Application Versions**

PK-Sim Version 12.0.440 MoBi Version 12.0.434

#### Language Settings

English (Germany) (en-DE)

#### Computer Name

DESKTOP-CF7981D

### Operating System

Windows 10 Enterprise

#### Architecture

x64

#### Running on Virtual Machine

Yes

#### Running on Terminal Session

No

## 1.2 Comparison Results

#### Overall Comparison Result

Valid

#### **Installation Folder**

 $C: \ \ Program Data \ \ Open \ Systems \ Pharmacology \ \ Installation \ \ Validator \ \ \ \ \ Batch Files$ 

#### Computed Folder

#### 1.2.1 Valid Simulations (155/155)

 $Simulation: Beagle\_SingleORAL\_Dissolved-Beagle\_SingleORAL\_Dissolved$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|drug|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 0

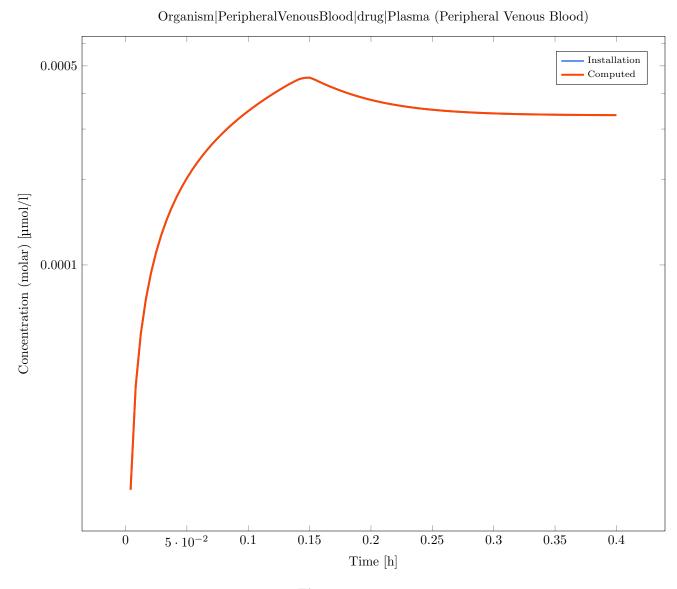


Figure 1.1

 $\label{lem:simpleORAL_Dissolved_Beagle_SingleORAL_Dissolved_MW_200_fu_0.2\_LogP\_5\\ Result of the validation: Valid$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $\mathbf 0$ 

#### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

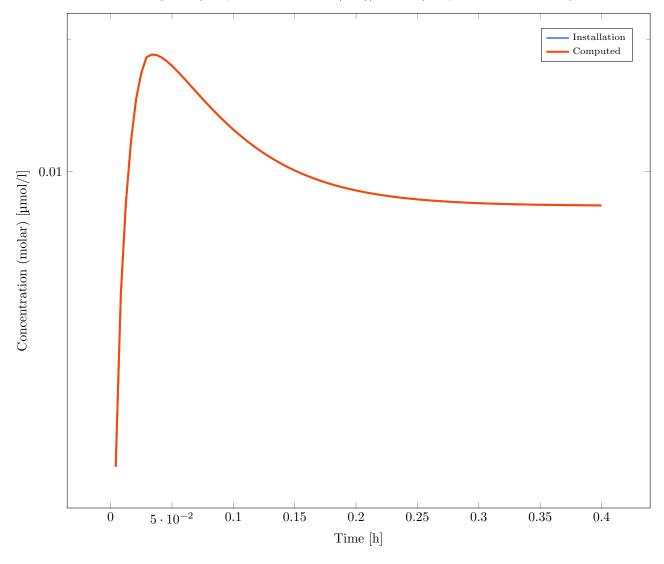


Figure 1.2

 $\label{lem:simulation:beagle_SingleORAL_Dissolved_MW_800_fu_0.6_LogP_--5 \\ Result of the validation: Valid$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $\mathbf 0$ 

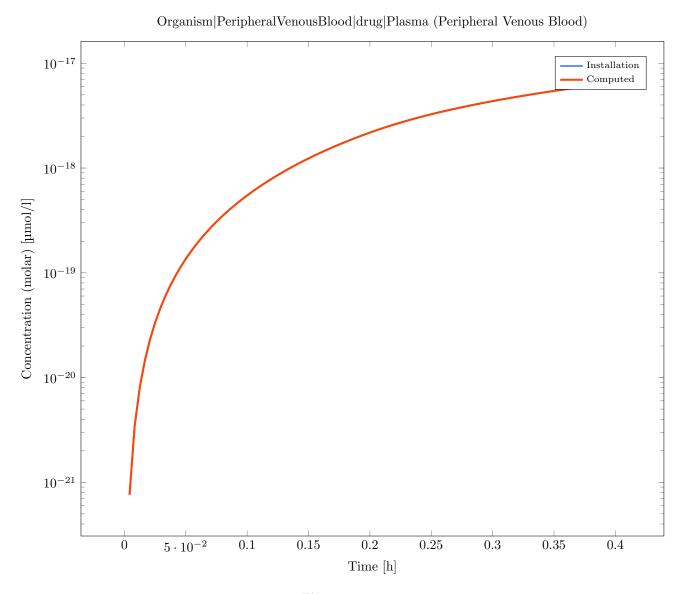
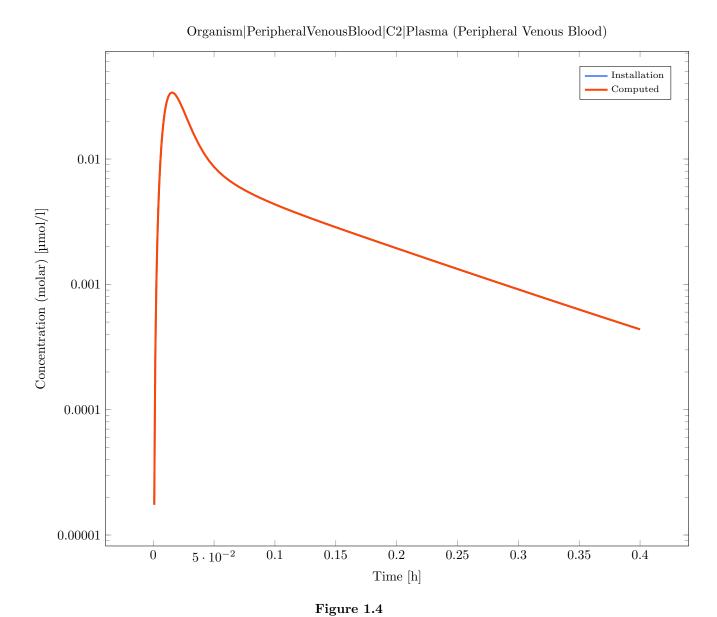


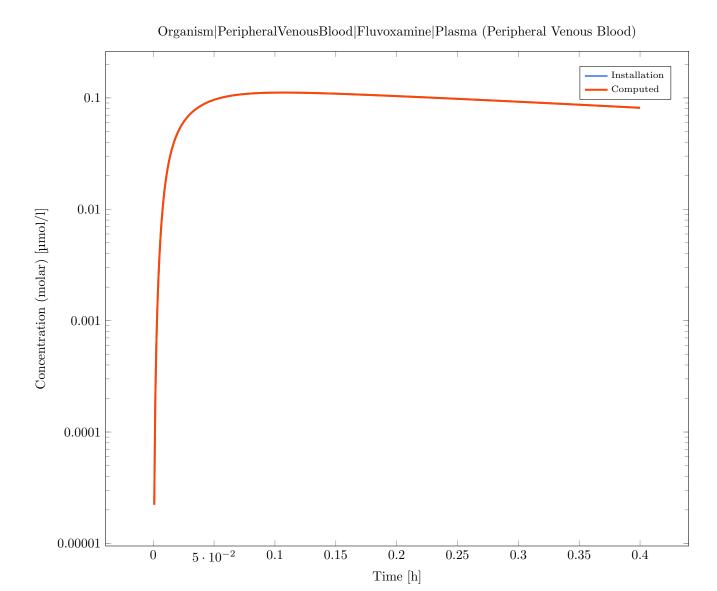
Figure 1.3

 ${\bf Simulation:\ DDI\_Multiple Combinations\hbox{--}01\_MM\_Competitive\_Competitive} \\ {\bf Result\ of\ the\ validation:\ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.84E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Fluvoxamine |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.00E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Itraconazole |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.44E-4

Figure 1.5

#### Organism|PeripheralVenousBlood|Itraconazole|Plasma (Peripheral Venous Blood)

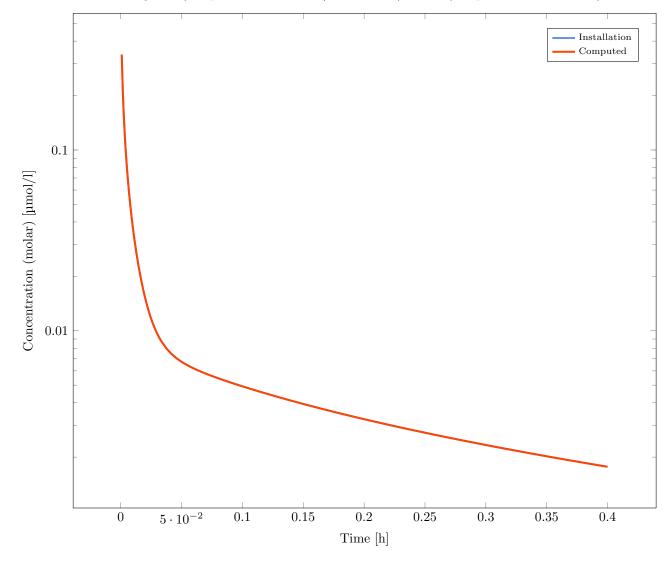


Figure 1.6

 ${\bf Simulation:\ DDI\_Multiple Combinations-02\_MM\_Uncompetitive\_Uncompetitive\_Result\ of\ the\ validation:\ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.78E-4

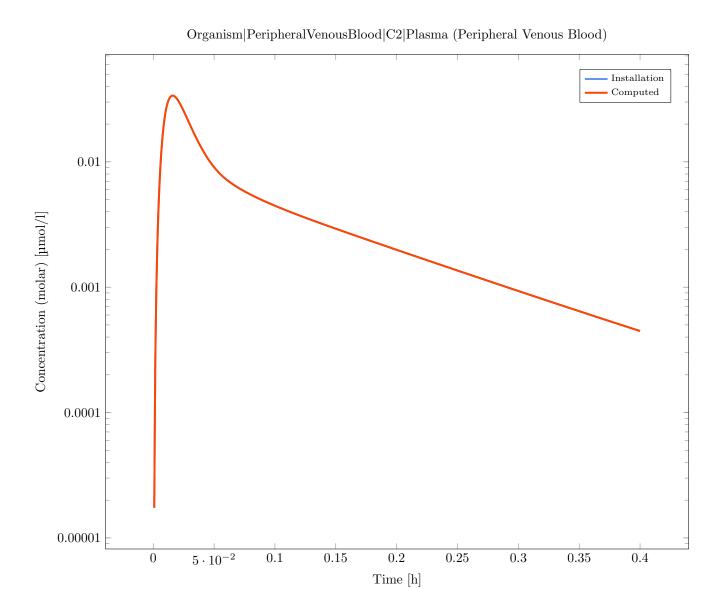


Figure 1.7

 $Output\ Path:\ Organism|PeripheralVenousBlood|Uncompetitive\_CYP3A4\_1|Plasma\ (PeripheralVenous\ Blood)$ 

Deviation: 3.93E-4

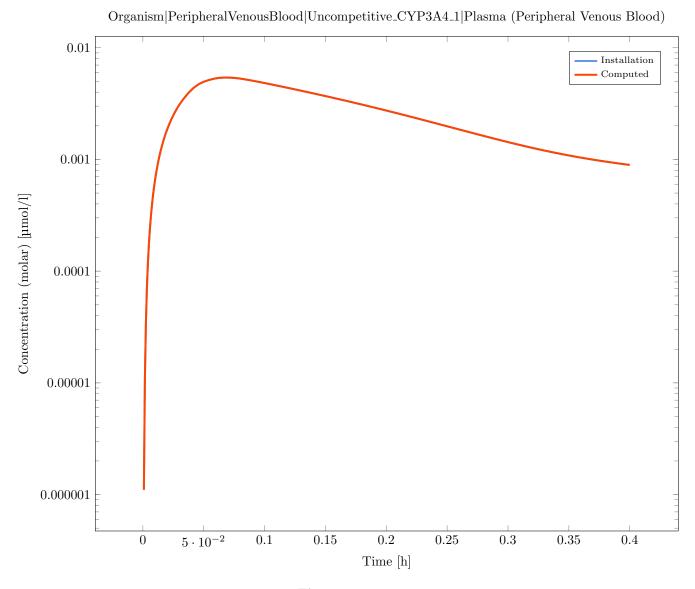
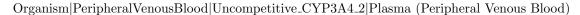


Figure 1.8

 $Output\ Path:\ Organism|PeripheralVenousBlood|Uncompetitive\_CYP3A4\_2|Plasma\ (PeripheralVenous\ Blood)$ 

Deviation: 3.69E-4



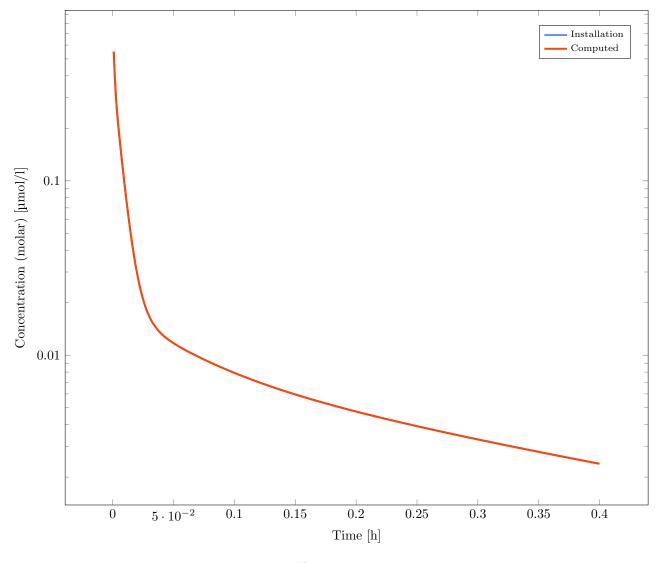


Figure 1.9

 ${\bf Simulation:\ DDI\_Multiple Combinations-03\_MM\_Noncompetitive\_N$ 

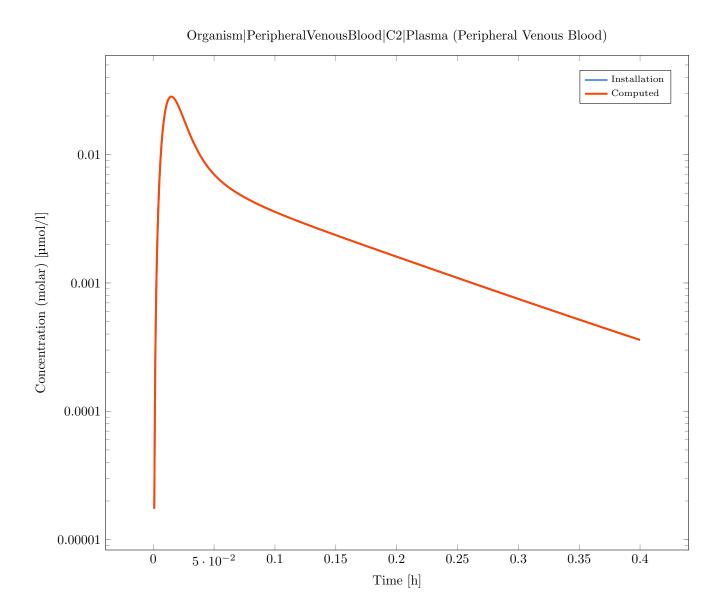


Figure 1.10

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.68E-4

Organism|PeripheralVenousBlood|Noncompetitive\_CYP3A4\_1|Plasma (Peripheral Venous Blood)

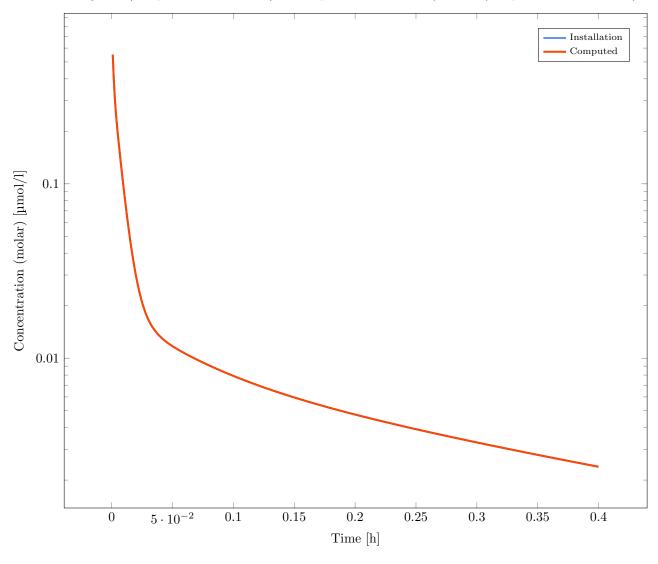


Figure 1.11

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_2|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.12E-4

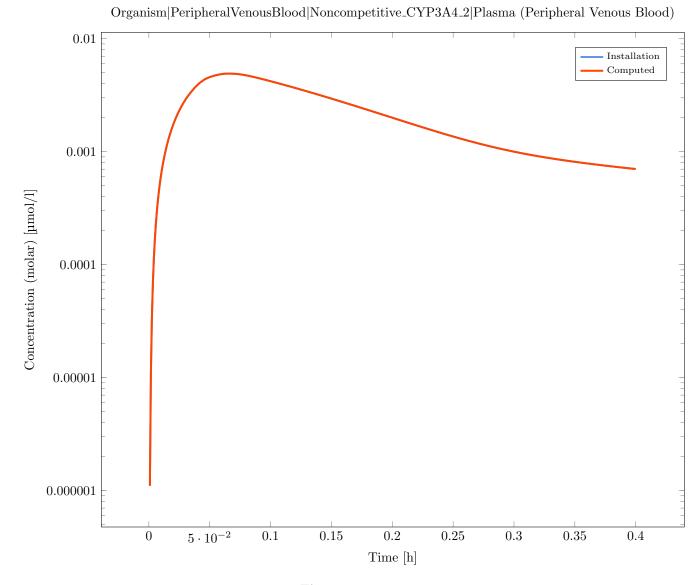


Figure 1.12

 $Simulation: \ DDI\_MultipleCombinations-04\_MM\_Mixed\_Mixed$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C2|Plasma (Peripheral Venous Blood)

Deviation: 3.82E-4

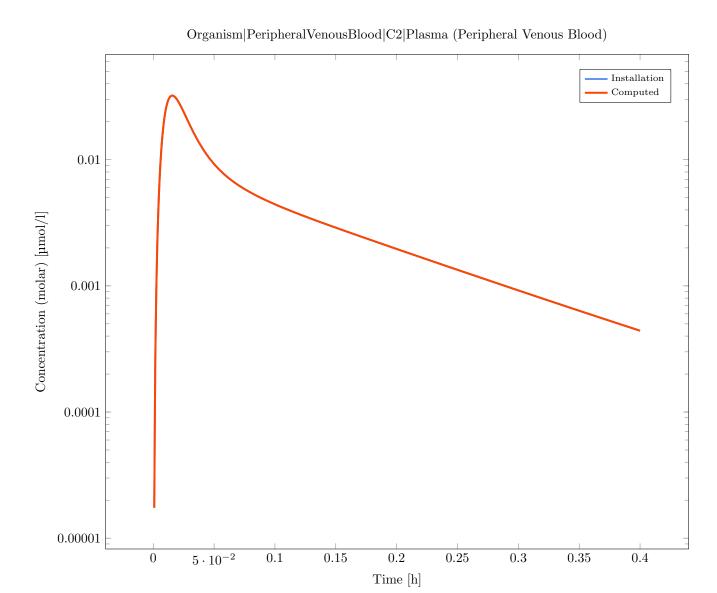


Figure 1.13

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_1|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 2.60E-4

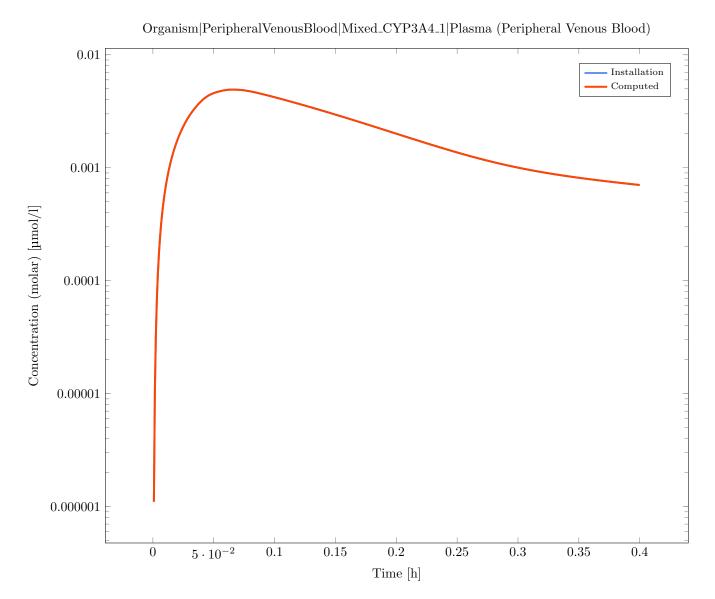


Figure 1.14

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_2|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 3.68E-4



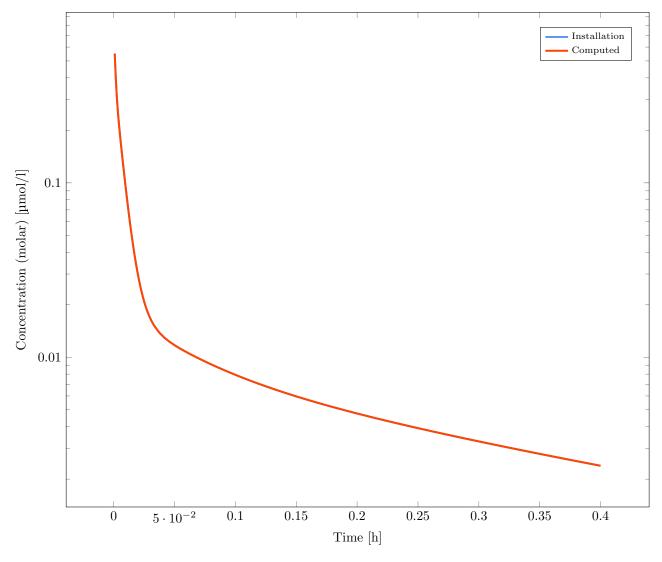


Figure 1.15

Simulation: DDI\_MultipleCombinations-05\_MM\_Mechanismbased\_Mechanismbased Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $3.69\hbox{E-}4$ 

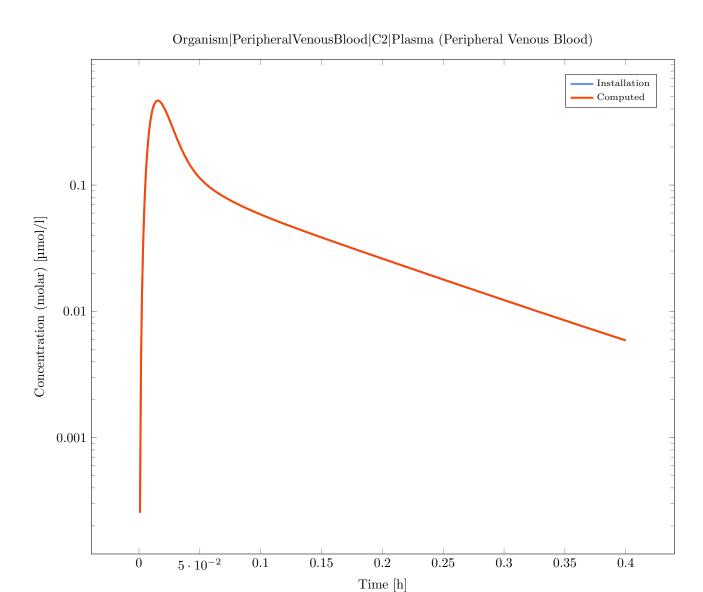
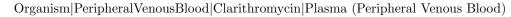


Figure 1.16

Output Path: Organism |PeripheralVenousBlood |Clarithromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.03E-4



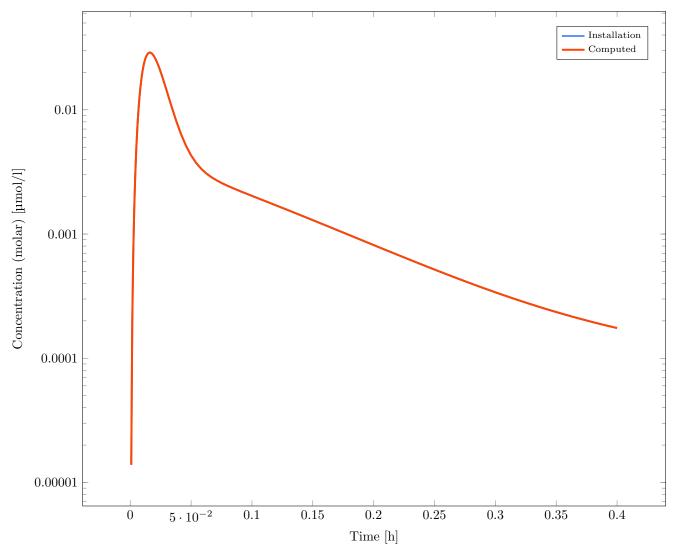
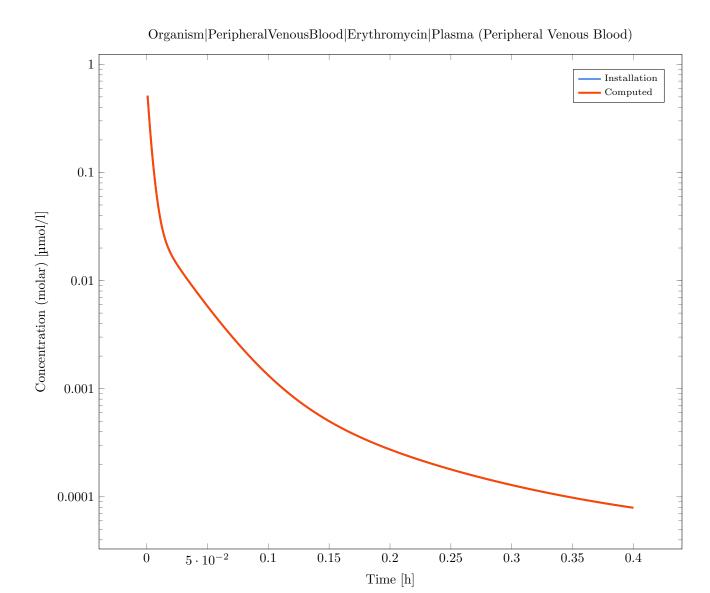


Figure 1.17

Output Path: Organism |PeripheralVenousBlood | Erythromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.61E-4



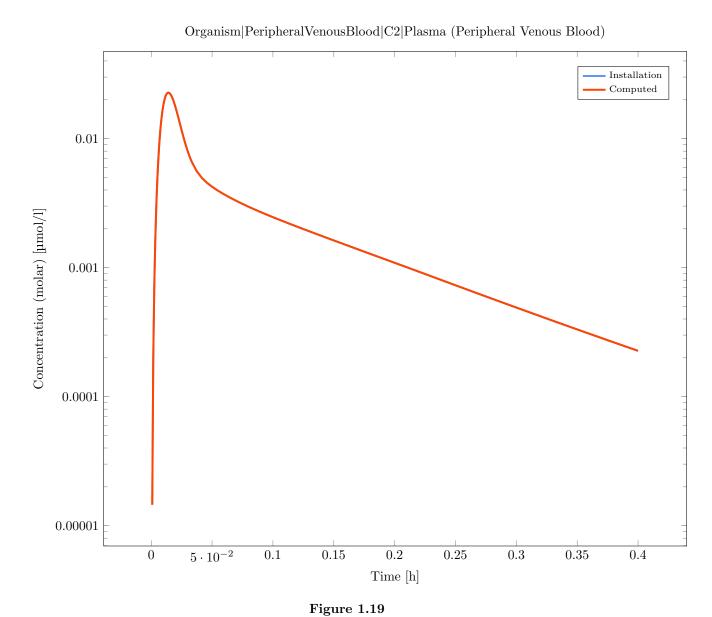
 ${\bf Simulation:\ DDI\_Multiple Combinations-06\_MM\_Induction\_Induction}$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C2|Plasma\ (Peripheral\ Venous\ Blood)$ 

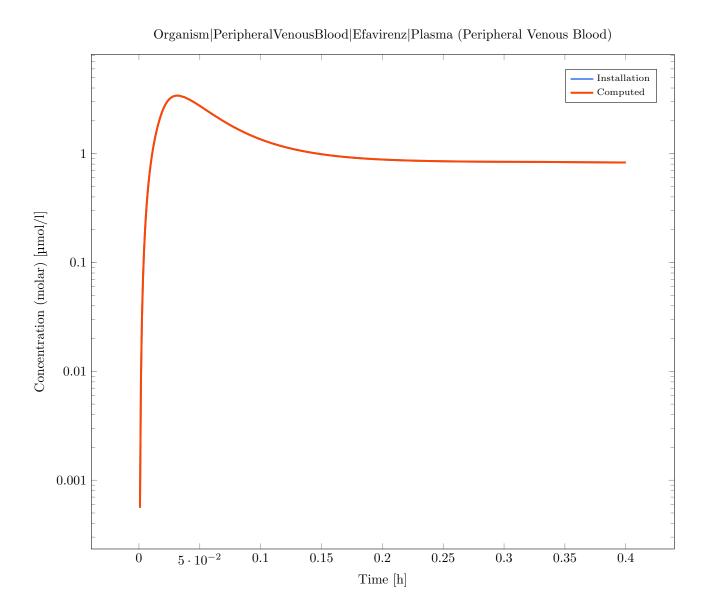
Figure 1.18

Deviation: 3.14E-4



-

Output Path: Organism|PeripheralVenousBlood|Efavirenz|Plasma (Peripheral Venous Blood) Deviation: 1.76E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Rifampicin |Plasma (Peripheral Venous Blood)<br/> Deviation:  $3.68\hbox{E-}4$ 

**Figure 1.20** 

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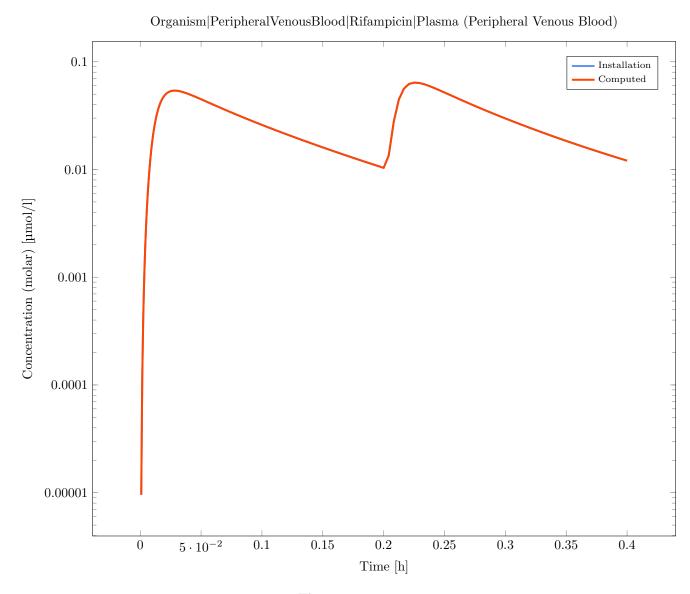
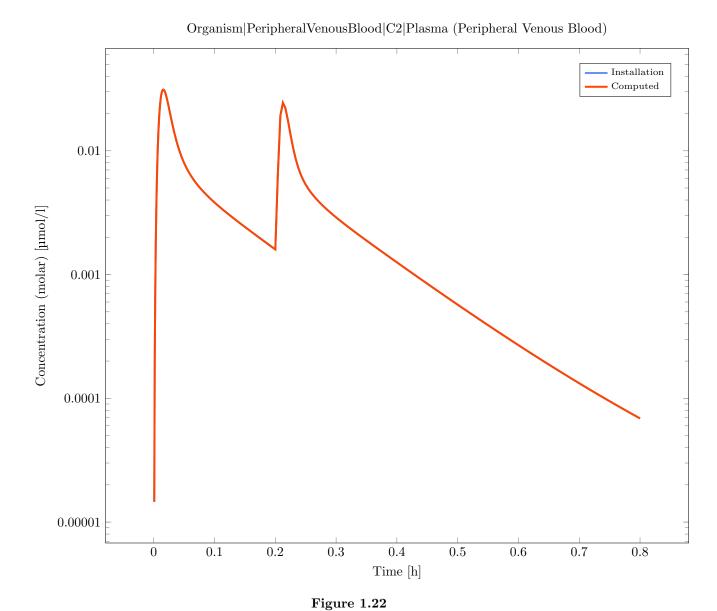


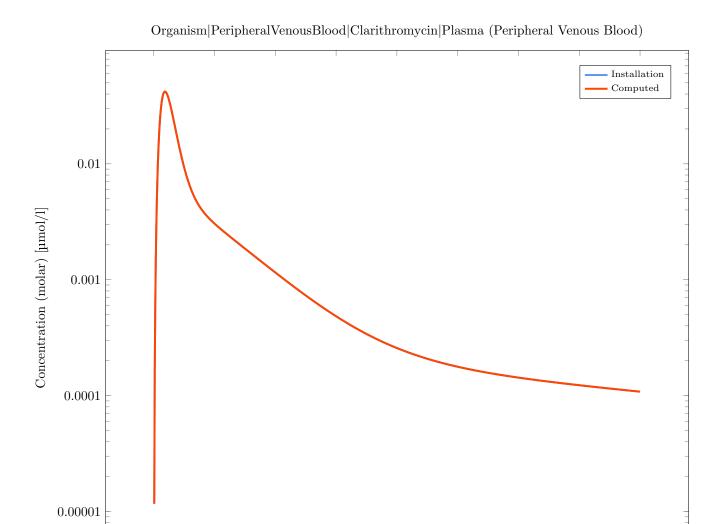
Figure 1.21

Simulation: DDI\_MultipleCombinations-07\_MM\_Competitive\_Competitive\_Mechanismbased\_Mechanismbased Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.28E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Clarithromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.12E-4



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0.4

Time [h]

0.5

0.6

0.7

0.8

Output Path: Organism |Peripheral Venous<br/>Blood |Erythromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 5.96E-4

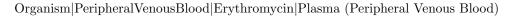
Figure 1.23

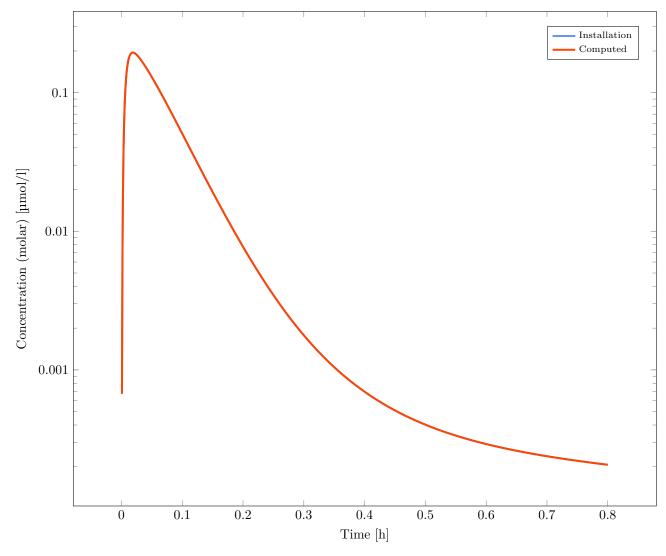
0.3

0

0.1

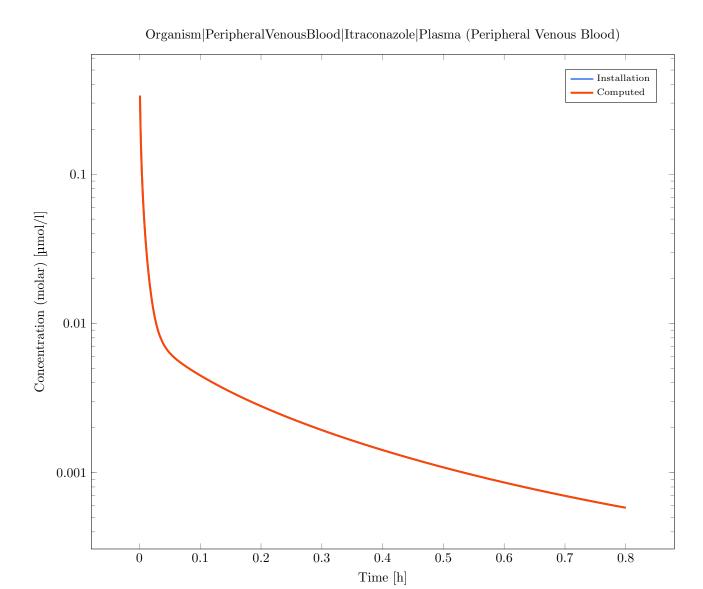
0.2





**Figure 1.24** 

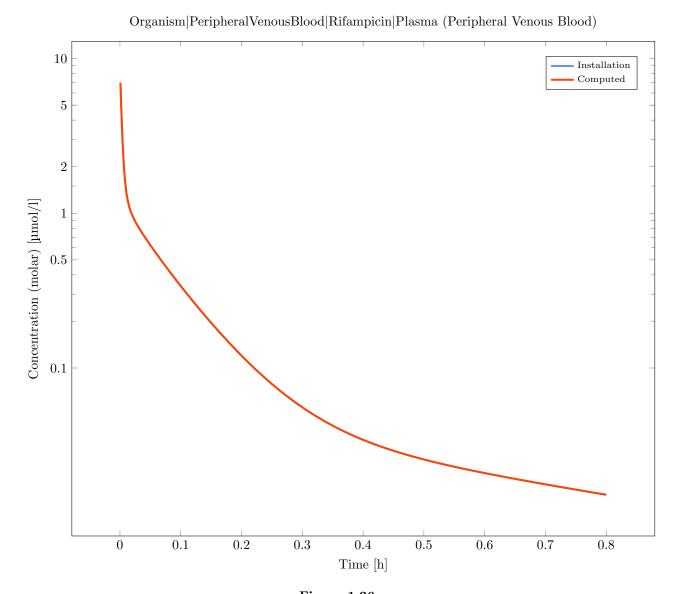
Output Path: Organism |Peripheral Venous<br/>Blood |Itraconazole |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.28E-4



Output Path: Organism|PeripheralVenousBlood|Rifampicin|Plasma (Peripheral Venous Blood)

Figure 1.25

Deviation: 4.68E-4



**Figure 1.26** 

 $Simulation: \ DDI\_Multiple Combinations - 08\_MM\_Uncompetitive\_Uncompetitive\_Mechanism based\_Mechanism based$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C2|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 6.01E-4

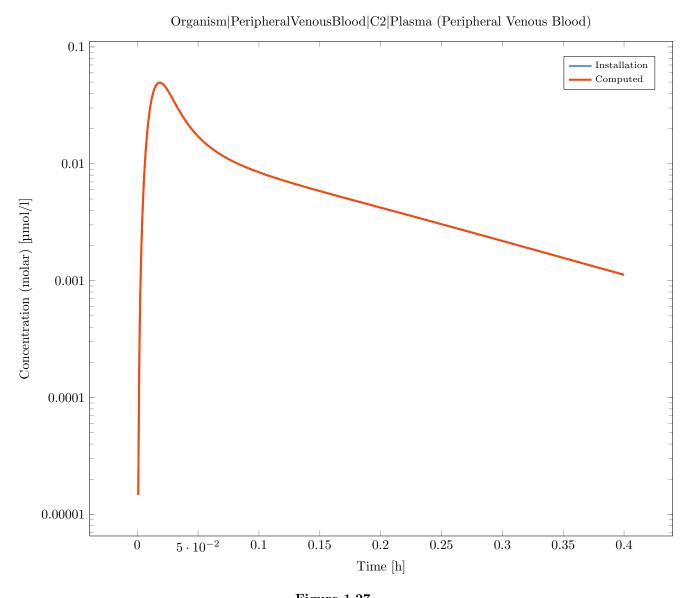
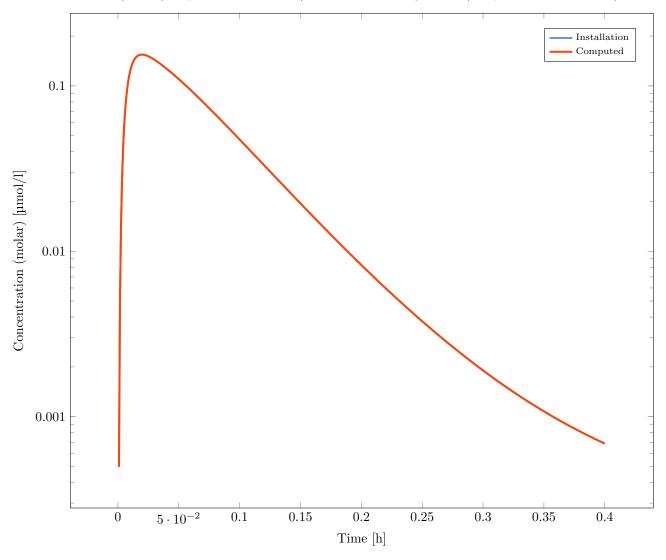


Figure 1.27

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 6.08E-4

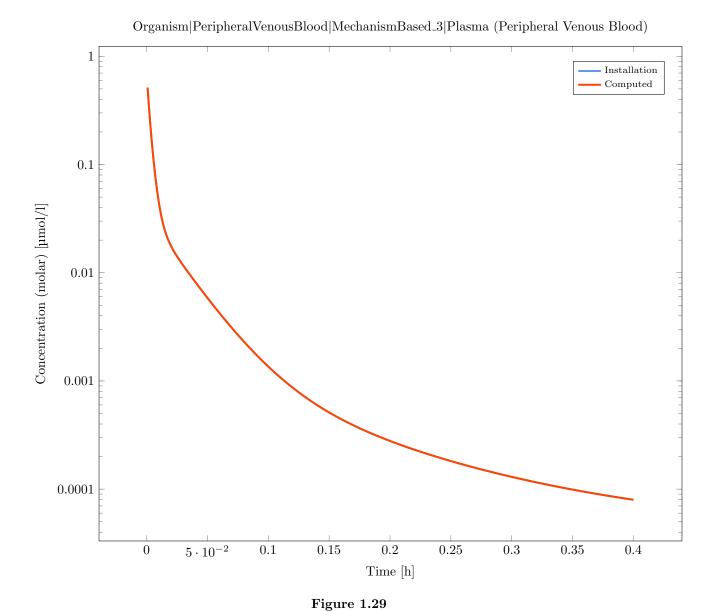
#### Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma (Peripheral Venous Blood)



**Figure 1.28** 

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ Venous\ Blood)$ 

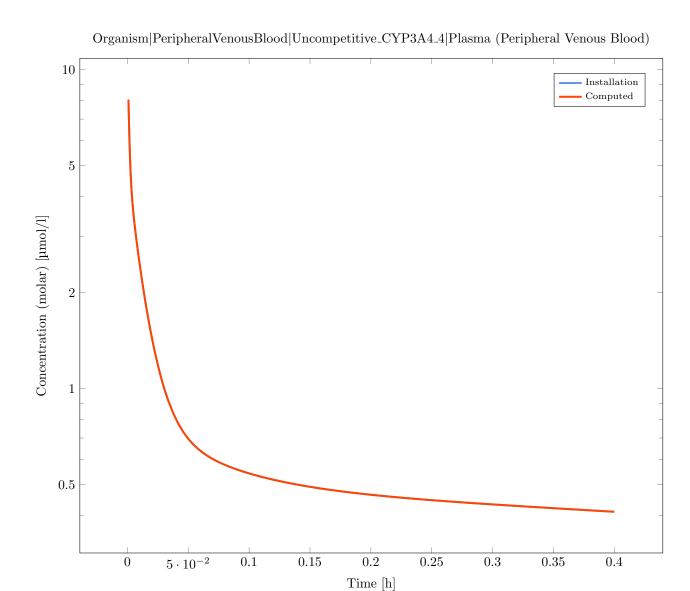
Deviation: 3.67E-4



Output Path: Organism |PeripheralVenousBlood |Uncompetitive\_CYP3A4\_4 |Plasma (Peripheral Venous Blood)

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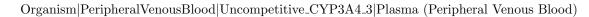
Deviation: 5.65E-5



Output Path: Organism |Peripheral VenousBlood |Uncompetitive\_CYP3A4\_3 |Plasma (Peripheral Venous Blood)

Figure 1.30

Deviation: 8.35E-5



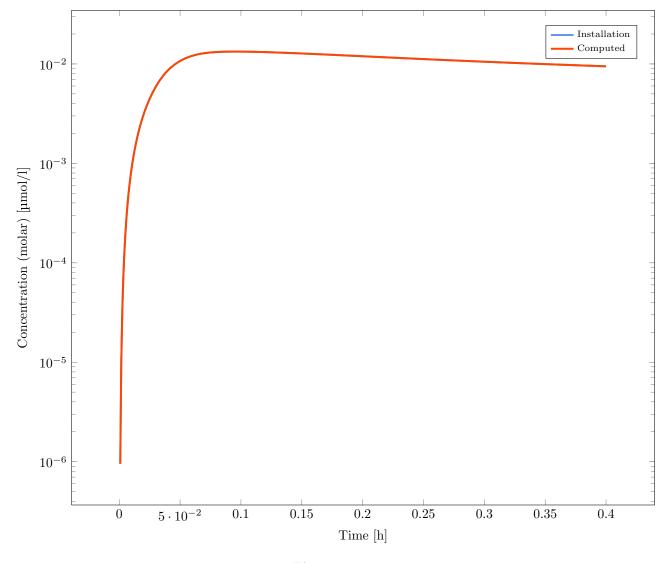


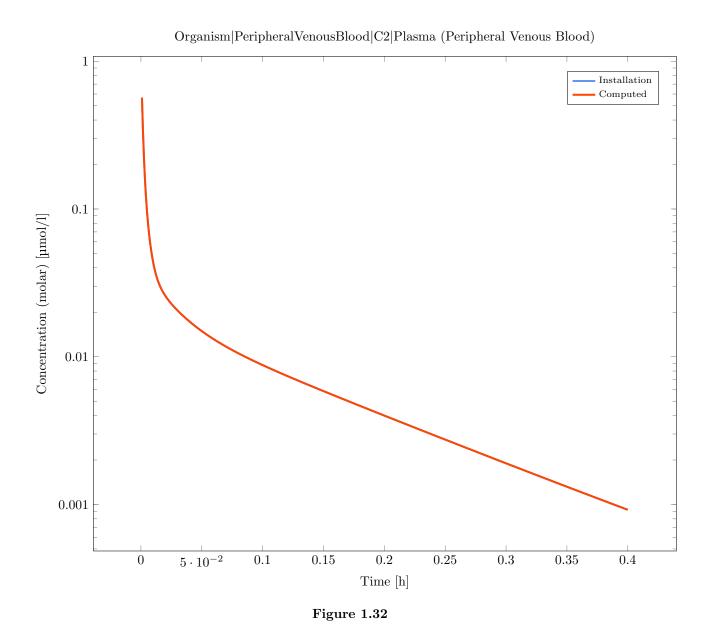
Figure 1.31

 $Simulation: \ DDI\_Multiple Combinations - 09\_MM\_Noncompetitive\_Noncompetitive\_Mechanism based\_Mechanism based$ 

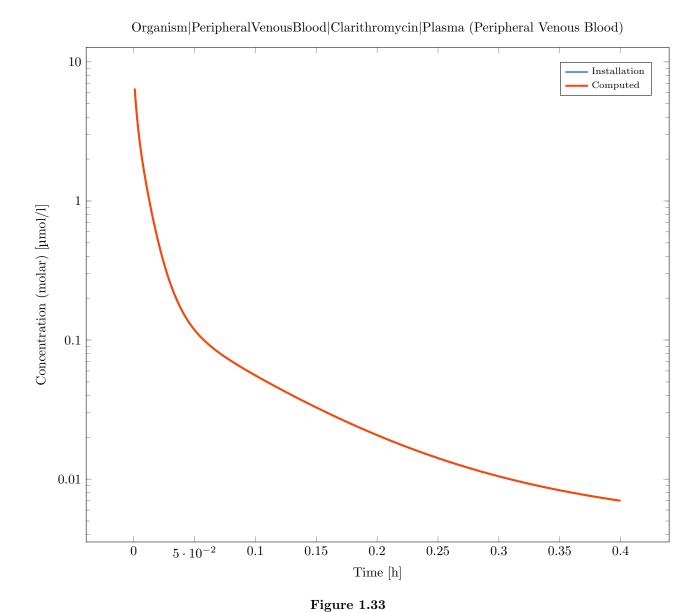
Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C2|Plasma (Peripheral Venous Blood)

Deviation: 3.09E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Clarithromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.51E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Erythromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 5.92E-4

#### Organism|PeripheralVenousBlood|Erythromycin|Plasma (Peripheral Venous Blood)

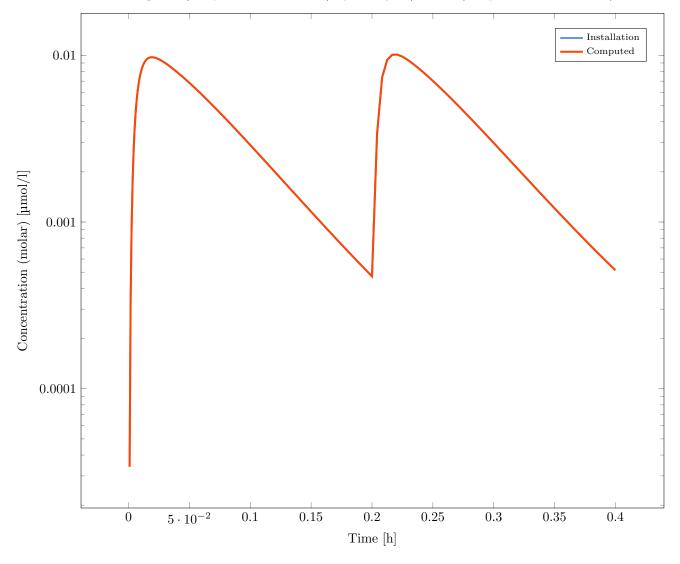
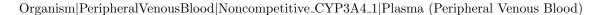


Figure 1.34

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.25E-4



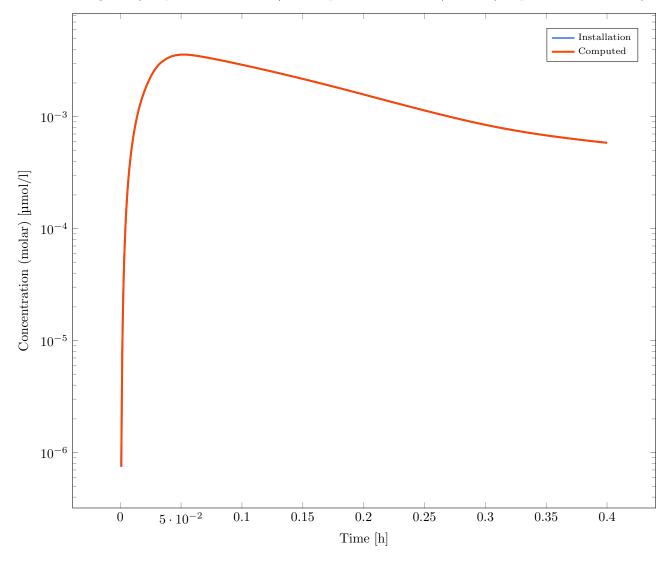


Figure 1.35

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_2|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.38E-4

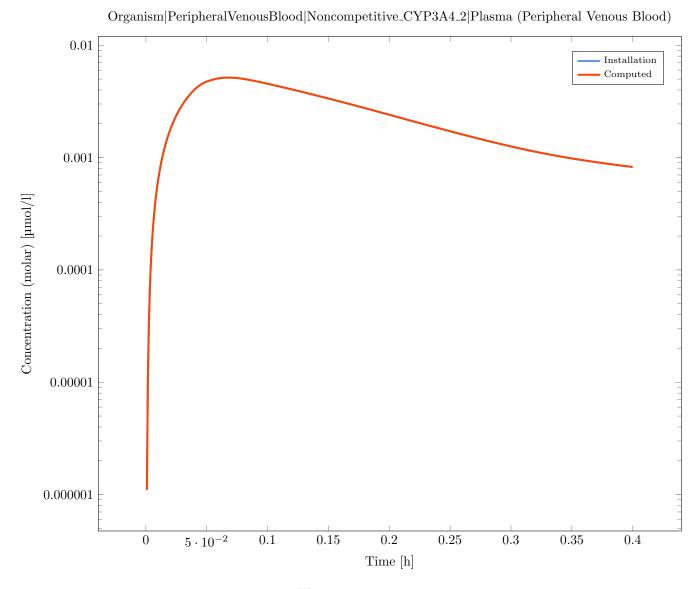
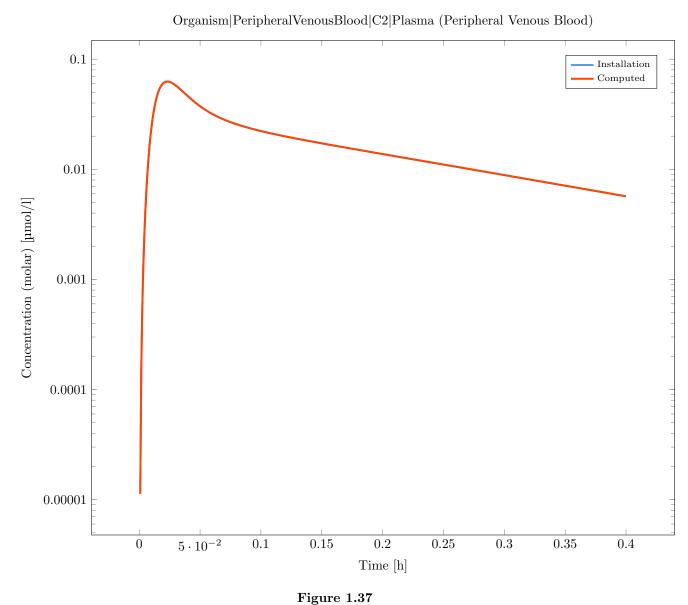


Figure 1.36

 ${\bf Simulation:\ DDI\_Multiple Combinations-10\_MM\_Mixed\_Mixed\_Mechanismbased\_Mech$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $4.92\hbox{E-}4$ 



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 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.67E-4

#### Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma (Peripheral Venous Blood)

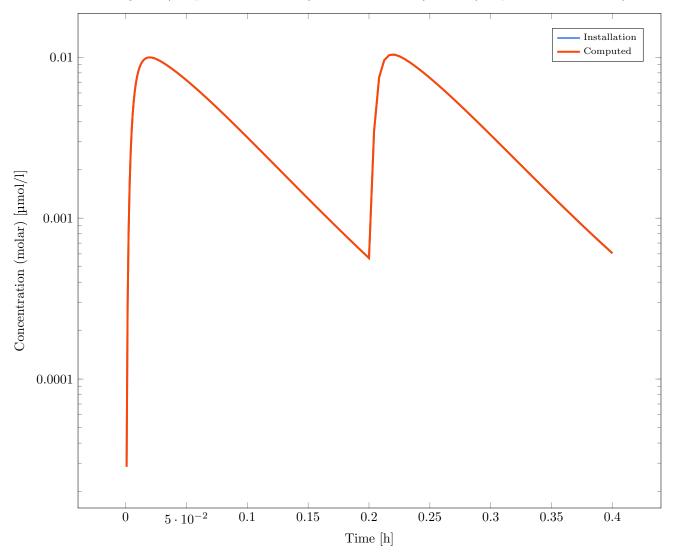


Figure 1.38

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.85E-4

#### Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma (Peripheral Venous Blood)

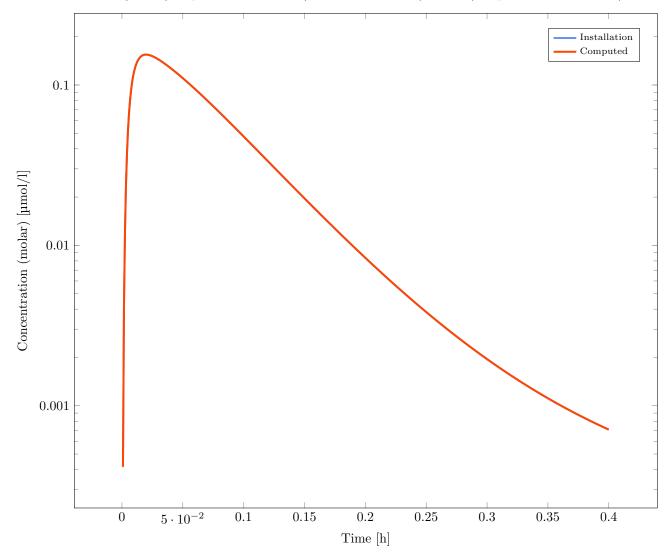
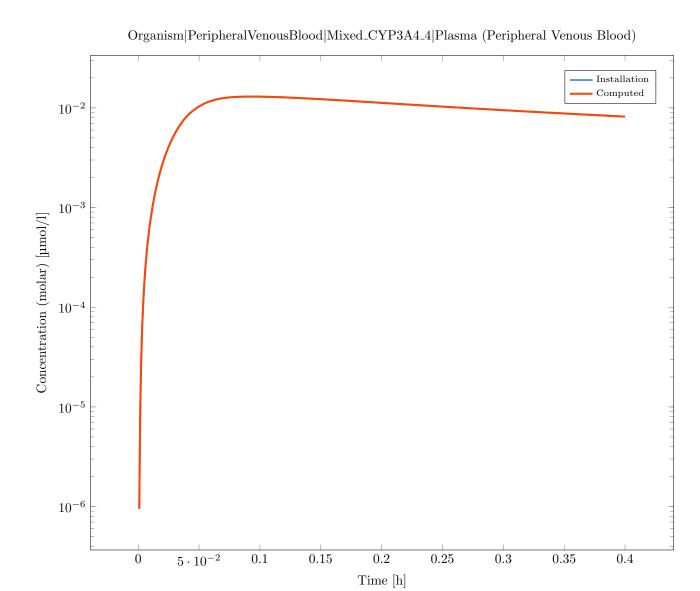


Figure 1.39

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_4|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 1.04E-4



 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_3|Plasma\ (Peripheral\ VenousBlood)$ 

Figure 1.40

Deviation: 1.61E-4

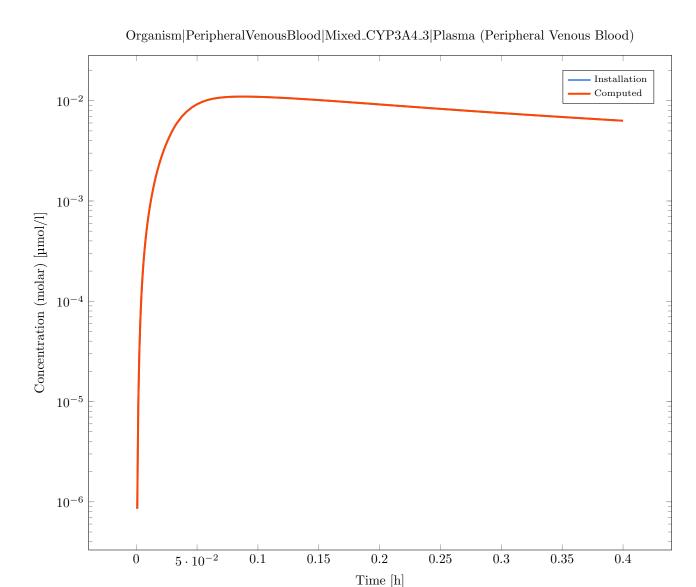
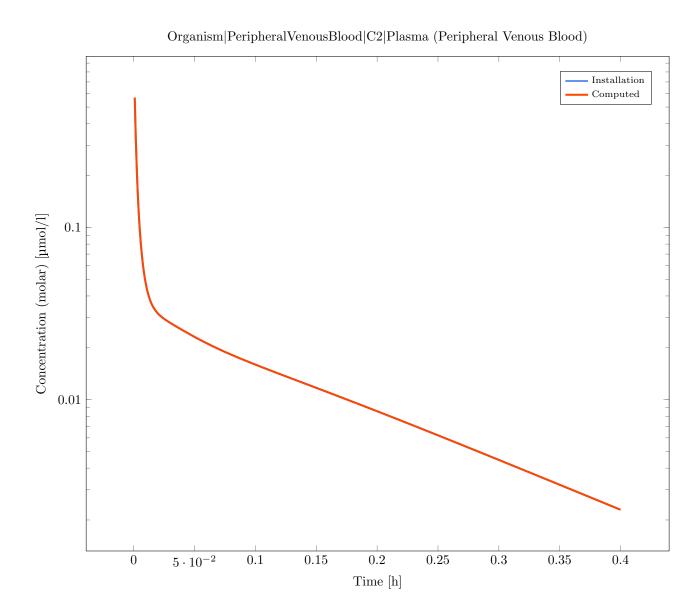


Figure 1.41

 ${\bf Simulation:} \ \ {\bf DDI\_Multiple Combinations-11\_MM\_Mechanismbased\_Mechanismbased\_Induction$ 

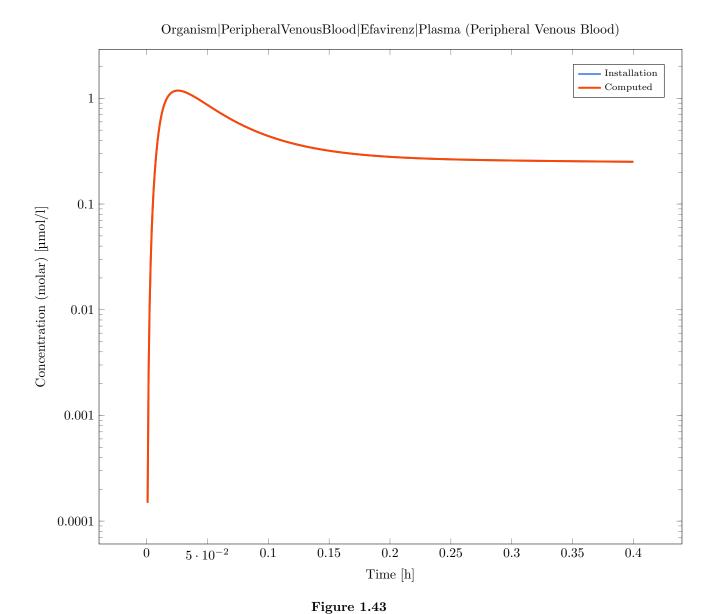
Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $5.05\hbox{E-}4$ 



Output Path: Organism |Peripheral Venous<br/>Blood |Efavirenz |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.74E-4

**Figure 1.42** 



 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 5.98E-4

#### Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma (Peripheral Venous Blood)

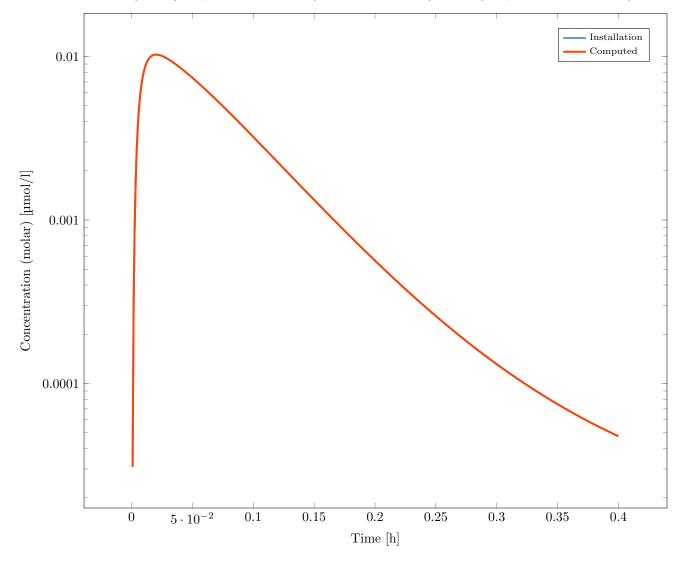


Figure 1.44

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 6.00E-4



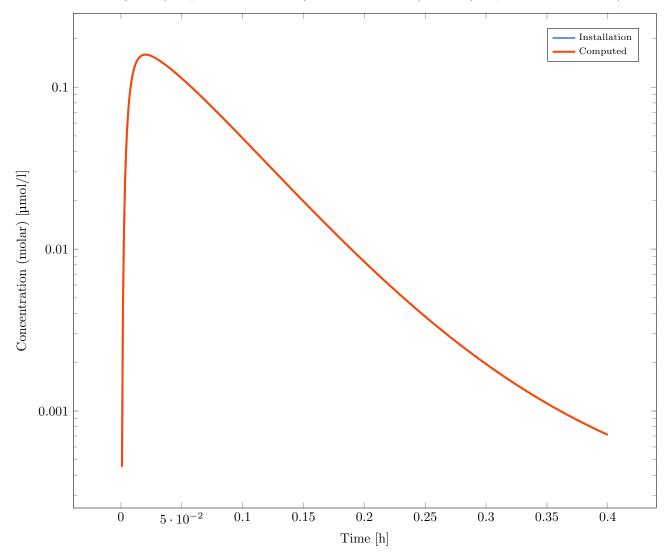
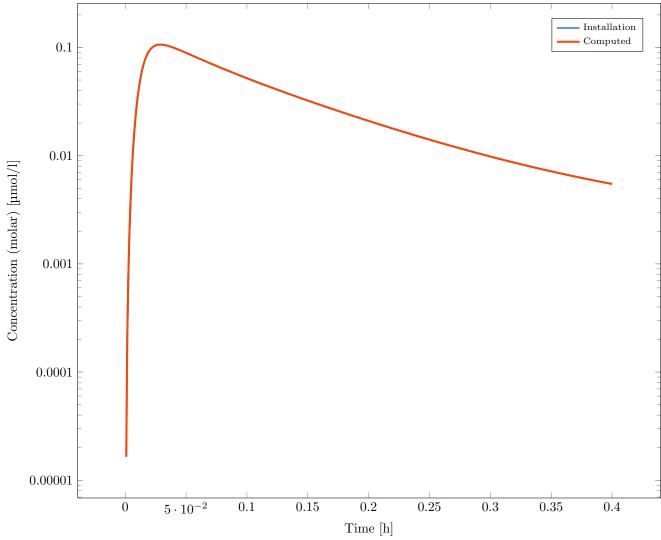


Figure 1.45

Output Path: Organism |Peripheral Venous<br/>Blood |Rifampicin |Plasma (Peripheral Venous Blood)<br/> Deviation:  $4.51 \hbox{E-}4$ 

### $Organism|Peripheral Venous Blood|Rifampicin|Plasma\ (Peripheral Venous Blood)$



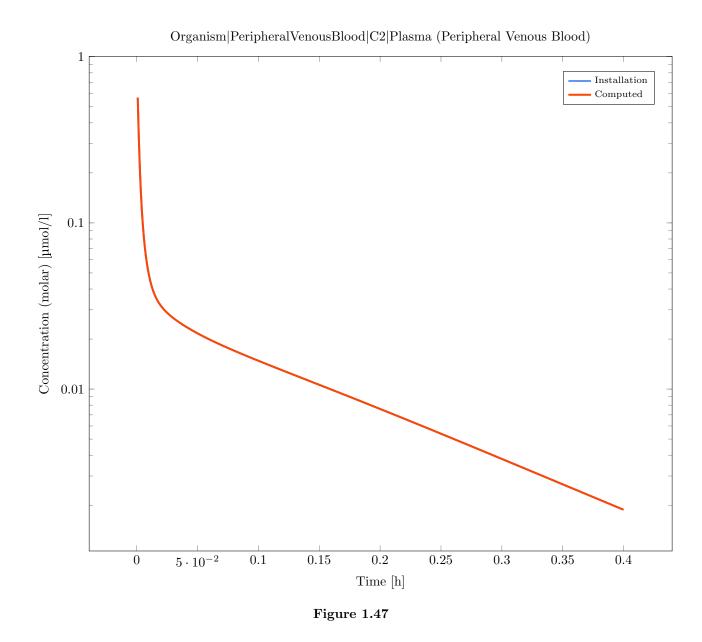
**Figure 1.46** 

 $Simulation: \ DDI\_MultipleCombinations-12\_MM\_All\_DDI\_Types$ 

Result of the validation: Valid

 $Output\ Path:\ Organism | Peripheral Venous Blood | C2 | Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.67E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Efavirenz |Plasma (Peripheral Venous Blood)<br/> Deviation:  $1.92 \hbox{E-}4$ 

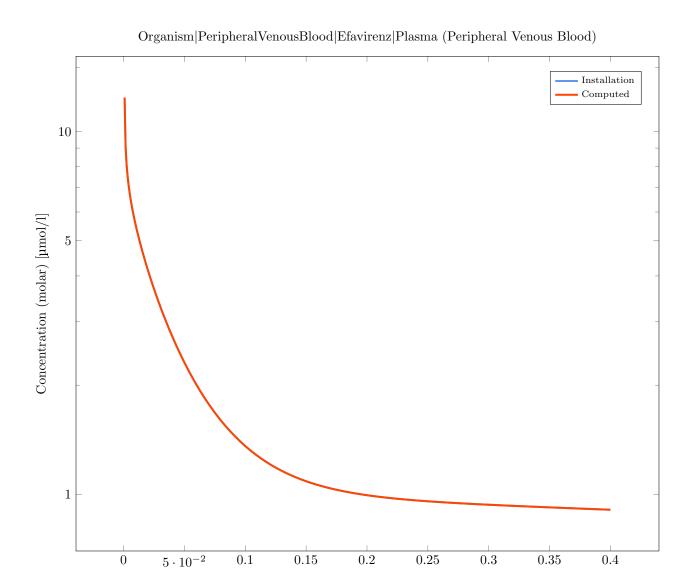
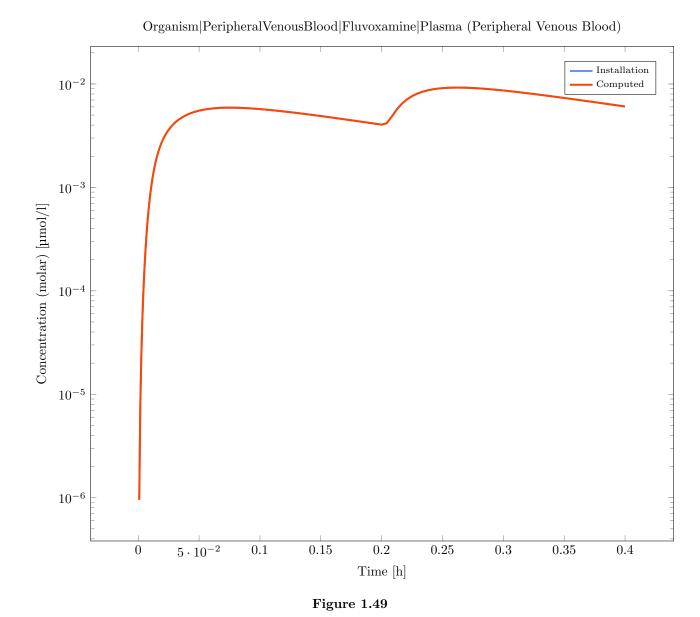


Figure 1.48

Time [h]

Output Path: Organism |Peripheral Venous<br/>Blood |Fluvoxamine |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.12E-4



 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.81E-4



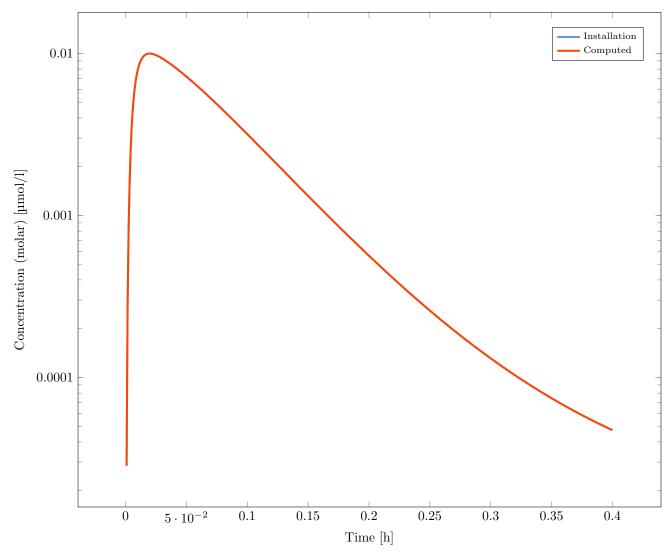


Figure 1.50

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_3|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 4.21E-4

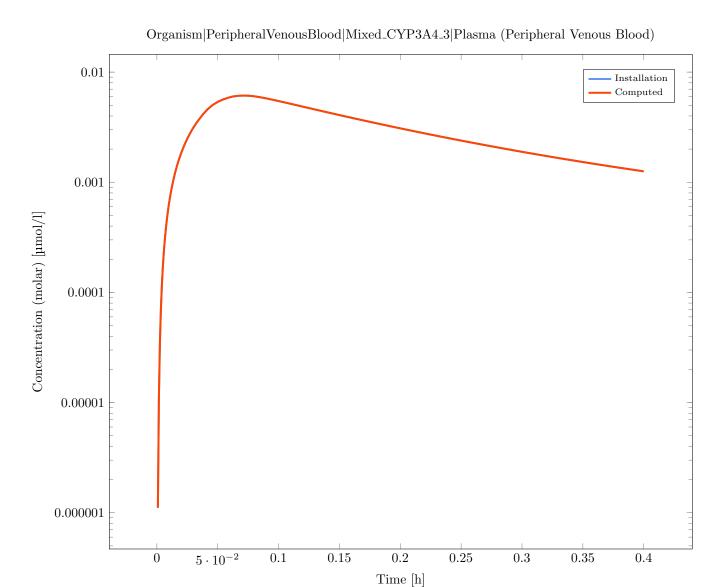
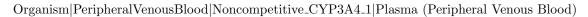


Figure 1.51

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.11E-4



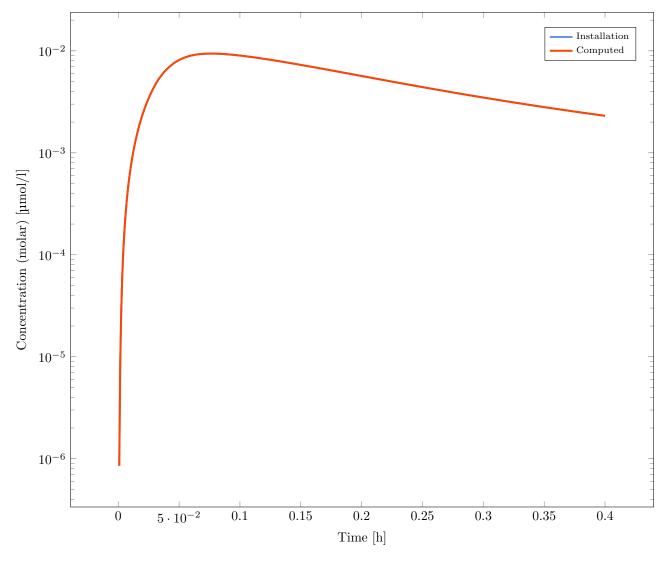


Figure 1.52

 $Output\ Path:\ Organism|PeripheralVenousBlood|Uncompetitive\_CYP3A4\_3|Plasma\ (PeripheralVenous\ Blood)$ 

Deviation: 5.31E-4

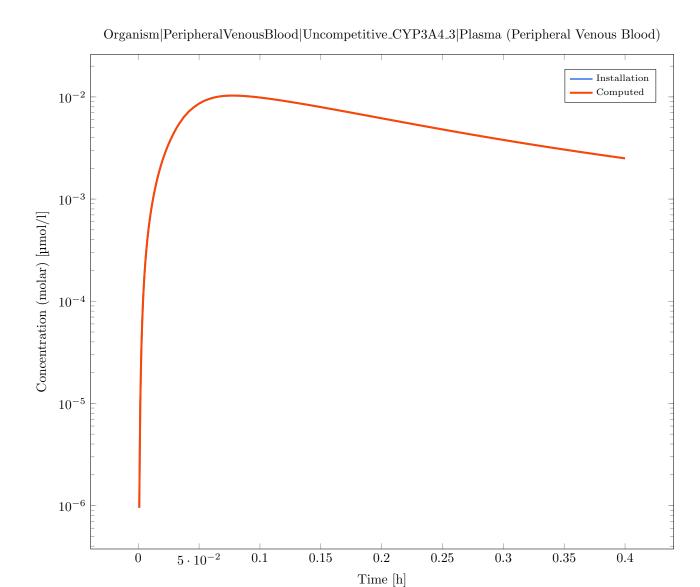
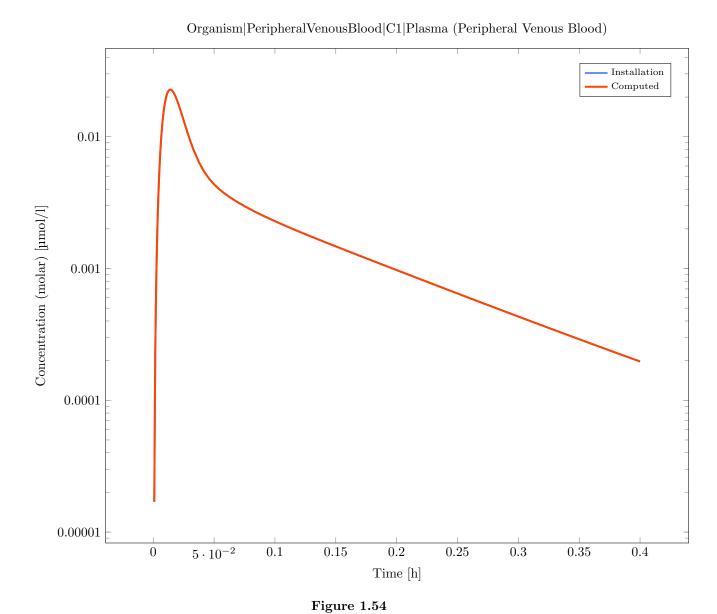


Figure 1.53

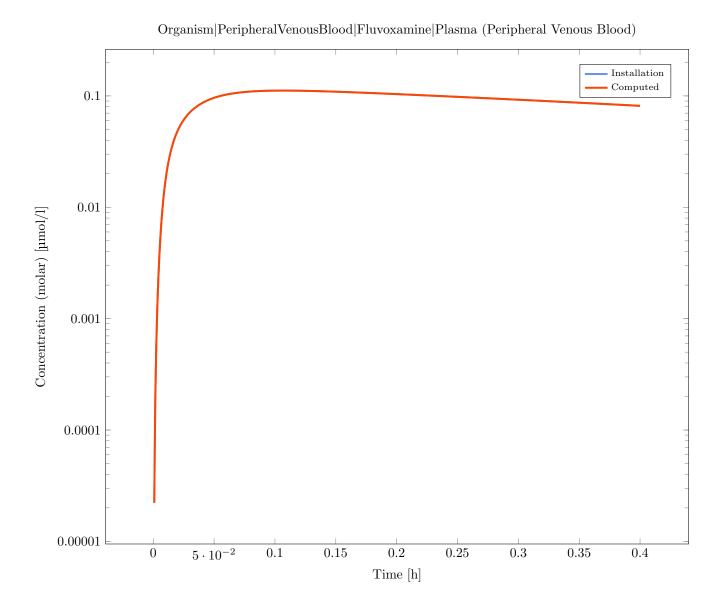
 ${\bf Simulation:\ DDI\_Multiple Combinations-21\_1st\_Competitive\_Competitive\_Result\ of\ the\ validation:\ Valid}$ 

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 2.97E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Fluvoxamine |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.00E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Itraconazole |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.44E-4

Figure 1.55

# Installation Computed 0.1 Concentration (molar) [µmol/l] 0.01

#### Organism|PeripheralVenousBlood|Itraconazole|Plasma (Peripheral Venous Blood)

Figure 1.56

0.2

Time [h]

0.25

0.3

0.35

0.4

0.15

Simulation: DDI\_MultipleCombinations-23\_1st\_Noncompetitive\_Noncompetitive Result of the validation: Valid

0.1

 $5 \cdot 10^{-2}$ 

 $Output\ Path:\ Organism | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Noncompetitive\_CYP3A4\_1 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Peripheral Venous Blood$ Venous Blood)

Deviation: 3.69E-4

0

Organism|PeripheralVenousBlood|Noncompetitive\_CYP3A4\_1|Plasma (Peripheral Venous Blood)

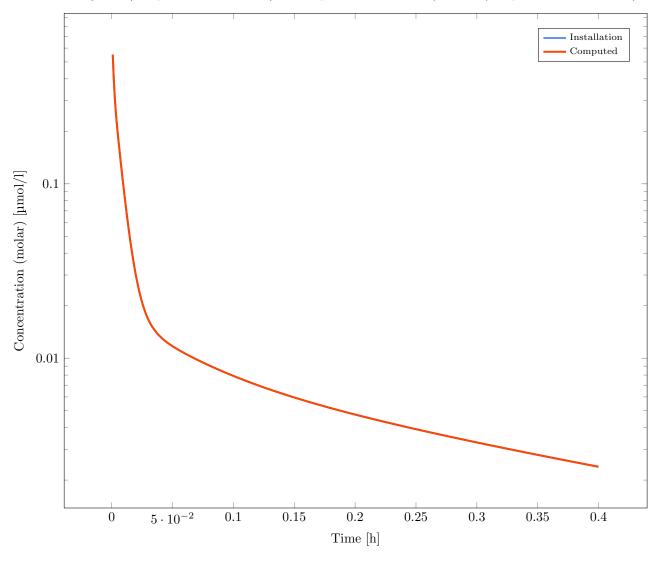


Figure 1.57

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_2|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.23E-4

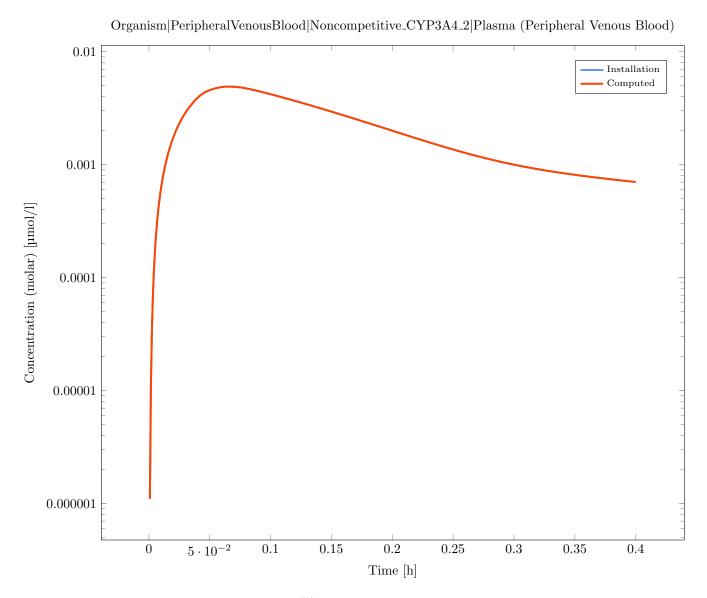


Figure 1.58

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 2.65E-4

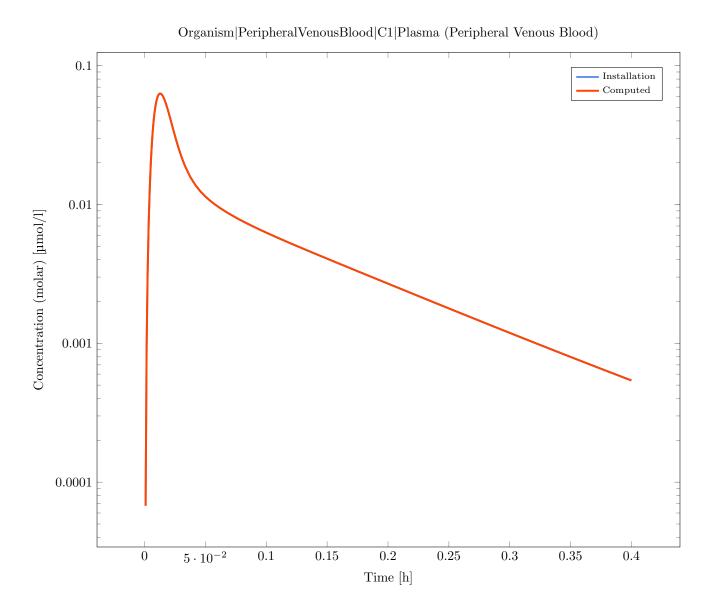


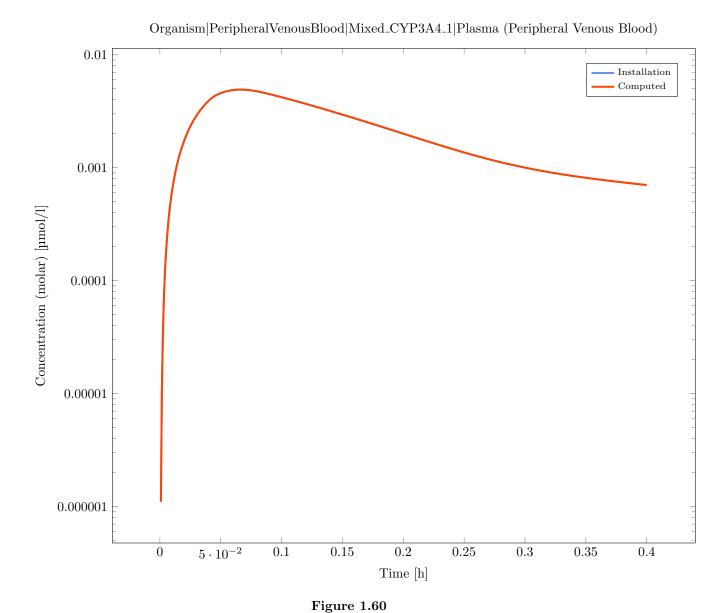
Figure 1.59

 $Simulation: \ DDI\_MultipleCombinations-24\_1st\_Mixed\_Mixed$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_1|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 2.99E-4



Output Path: Organism |PeripheralVenousBlood |Mixed\_CYP3A4\_2 |Plasma (Peripheral VenousBlood)

Deviation: 3.68E-4

#### $Organism | Peripheral Venous Blood | Mixed\_CYP3A4\_2 | Plasma \ (Peripheral Venous Blood)$

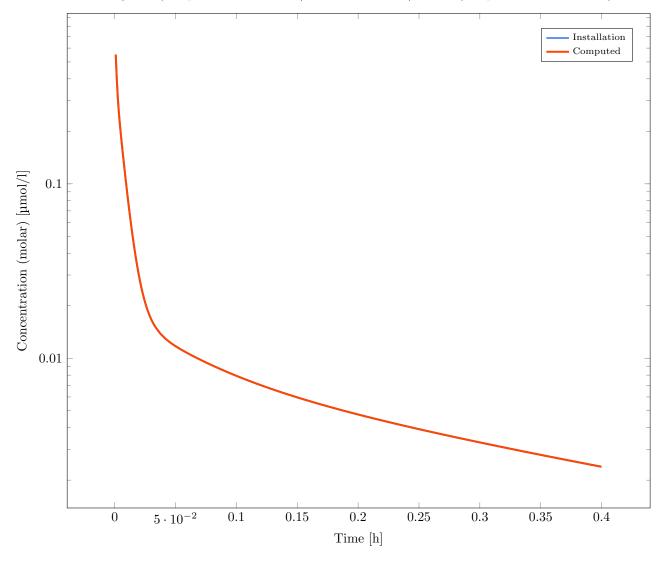
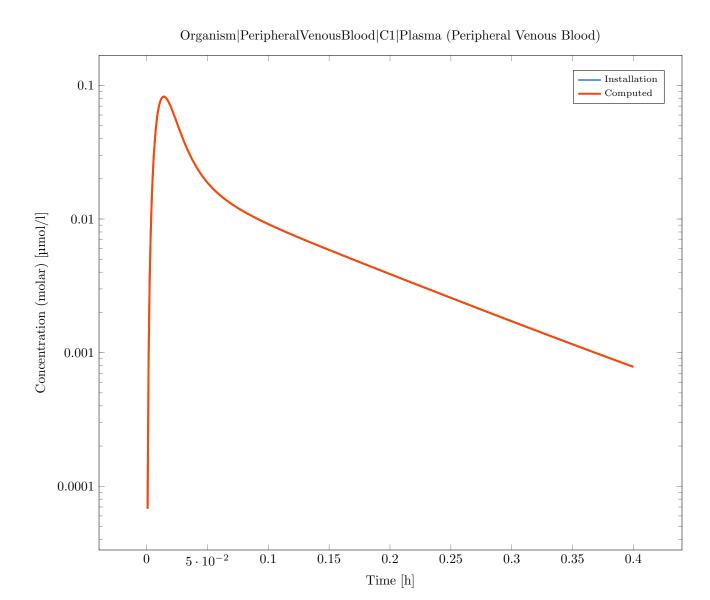


Figure 1.61

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

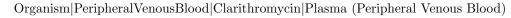
Deviation: 2.88E-4



**Figure 1.62** 

 ${\bf Simulation:\ DDI\_Multiple Combinations\hbox{--}25\_1st\_Mechanismbased\_Mechanismbased}. Result of the validation:\ Valid$ 

Output Path: Organism |Peripheral Venous<br/>Blood |Clarithromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.03E-4



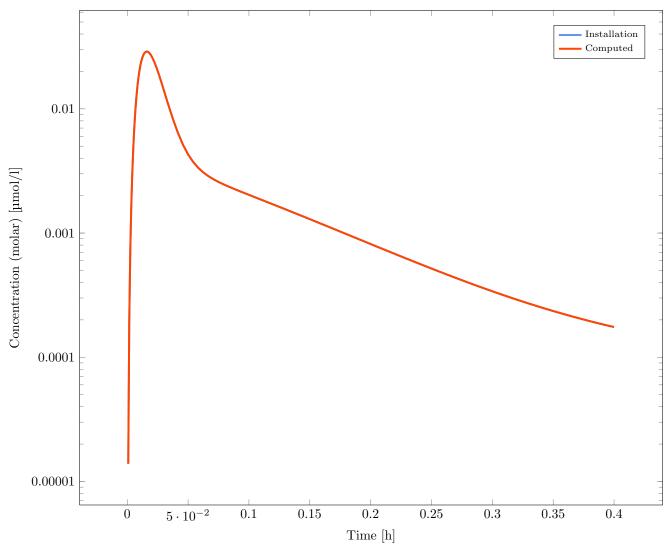
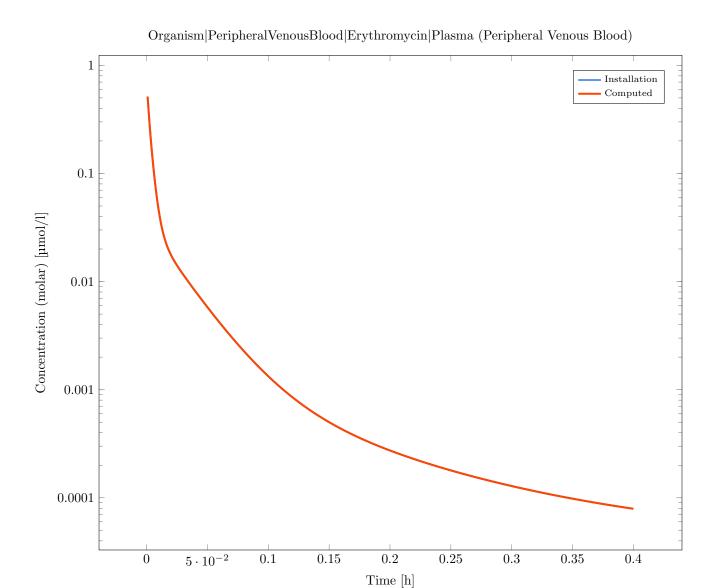


Figure 1.63

Output Path: Organism |Peripheral Venous<br/>Blood |Erythromycin |Plasma (Peripheral Venous Blood)<br/> Deviation:  $3.62 \pm 4$ 



**Figure 1.64** 

Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.67E-4

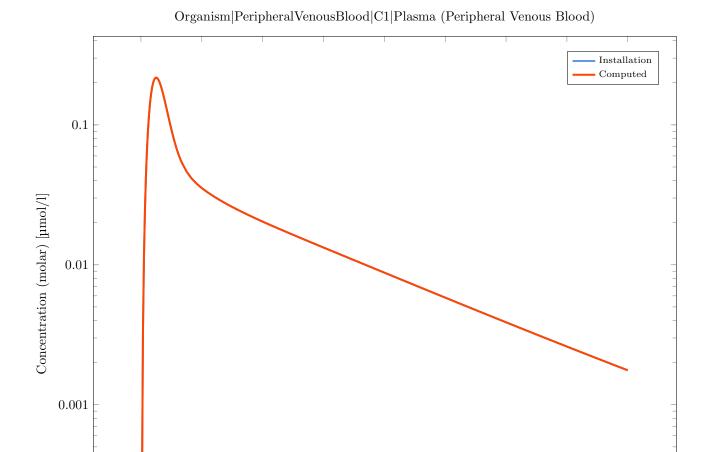


Figure 1.65

0.15

0.2

Time [h]

0.25

0.3

0.35

0.4

#### Simulation: DDI\_MultipleCombinations-26\_1st\_Induction\_Induction

0.1

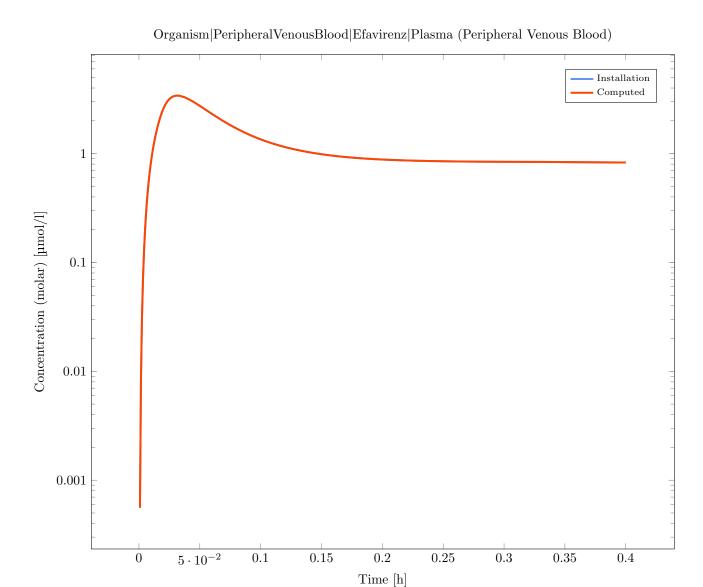
Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

#### $Output\ Path:\ Organism | Peripheral Venous Blood | Efavirenz | Plasma\ (Peripheral\ Venous\ Blood)$

Deviation: 1.67E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Rifampicin |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.68E-4

**Figure 1.66** 

## 

**Figure 1.67** 

0.2

Time [h]

0.25

0.3

0.35

0.4

0.15

Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $2.59\hbox{E-}4$ 

0.1

 $5\cdot 10^{-2}$ 

0

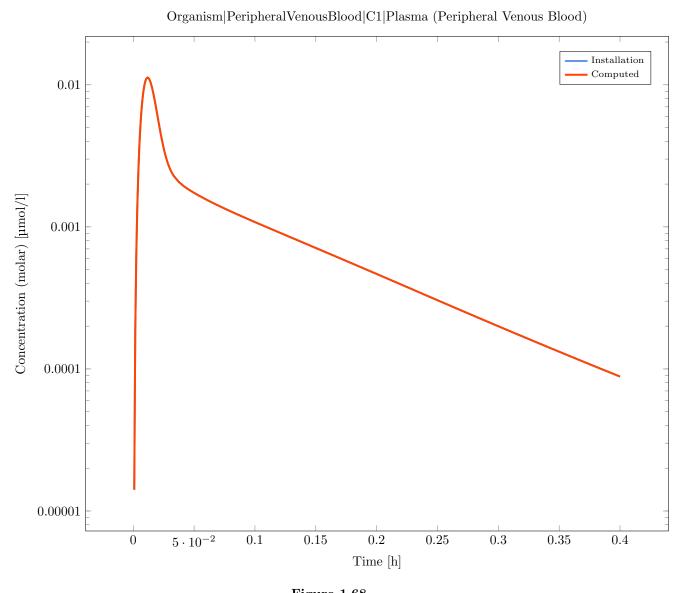
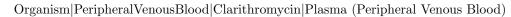


Figure 1.68

Simulation: DDI\_MultipleCombinations-27\_1st\_Competitive\_Competitive\_Mechanismbased\_Mechanismbased Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |Clarithromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.12E-4



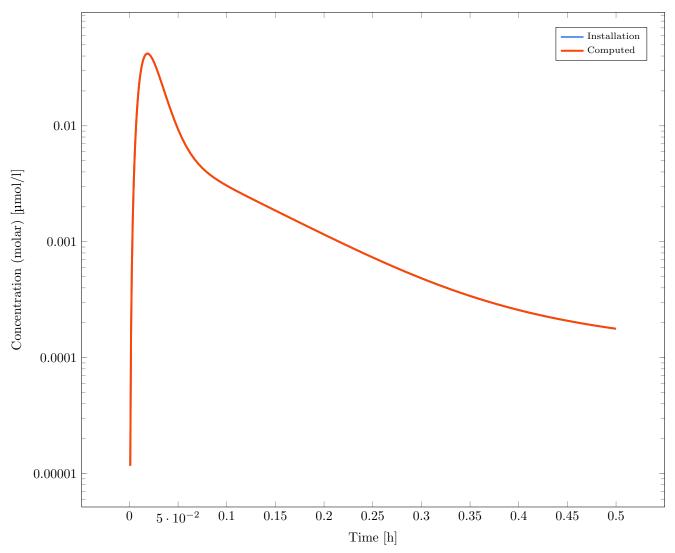
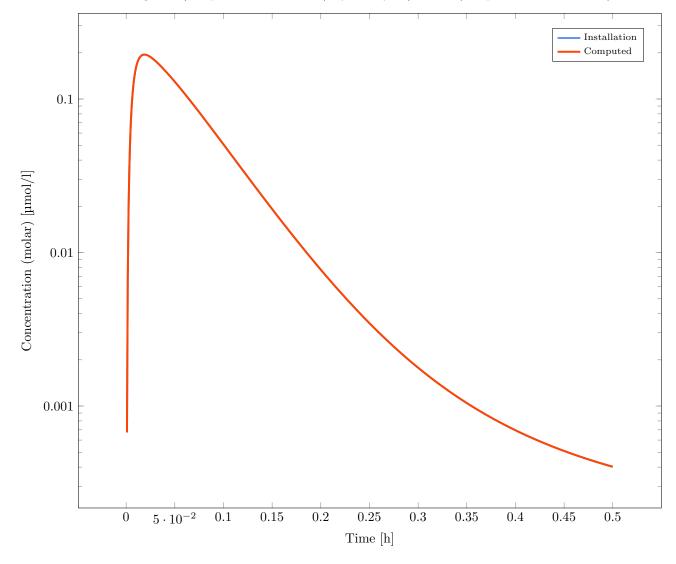


Figure 1.69

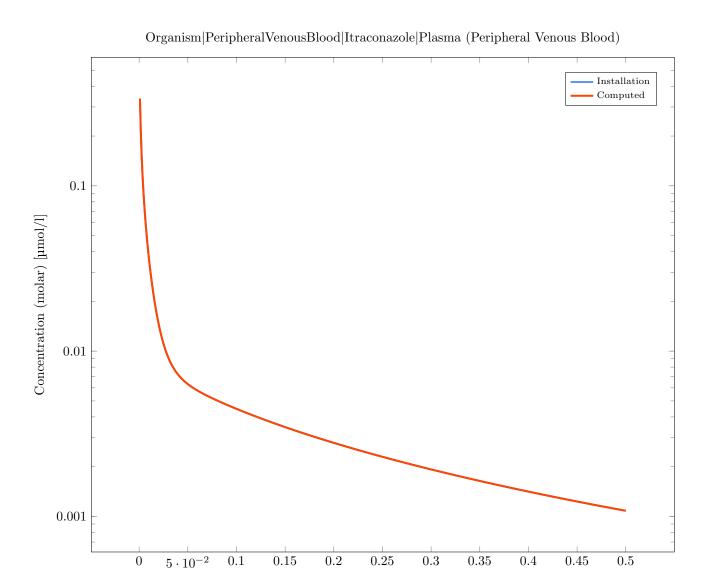
Output Path: Organism |PeripheralVenousBlood | Erythromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 5.96E-4

# Organism|PeripheralVenousBlood|Erythromycin|Plasma (Peripheral Venous Blood)



**Figure 1.70** 

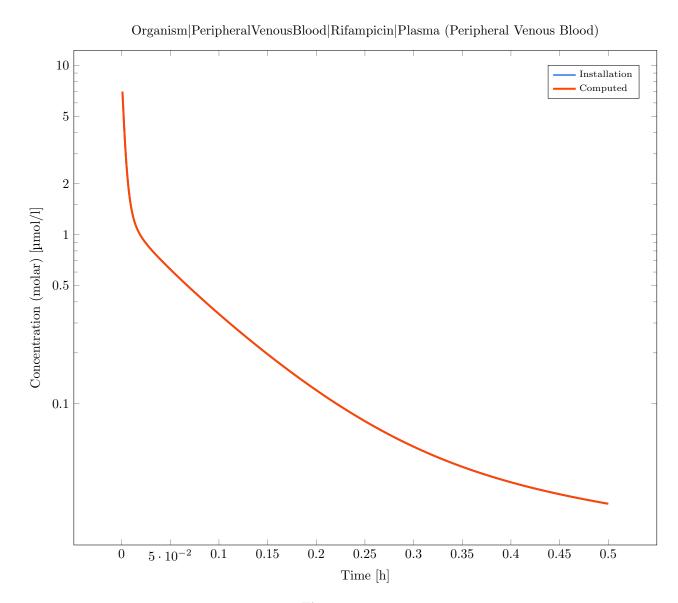
Output Path: Organism |Peripheral Venous<br/>Blood |Itraconazole |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.46E-4



**Figure 1.71** 

Time [h]

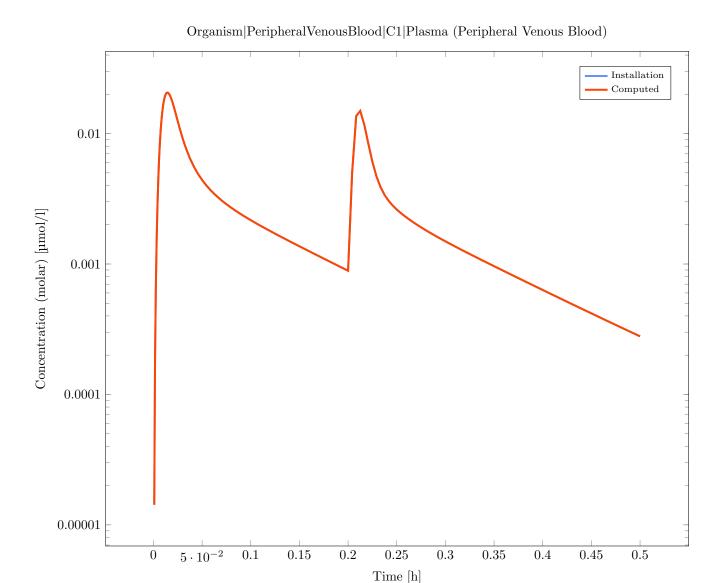
Output Path: Organism |Peripheral Venous<br/>Blood |Rifampicin |Plasma (Peripheral Venous Blood)<br/> Deviation:  $4.59\hbox{E-}4$ 



**Figure 1.72** 

Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.70E-4

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**Figure 1.73** 

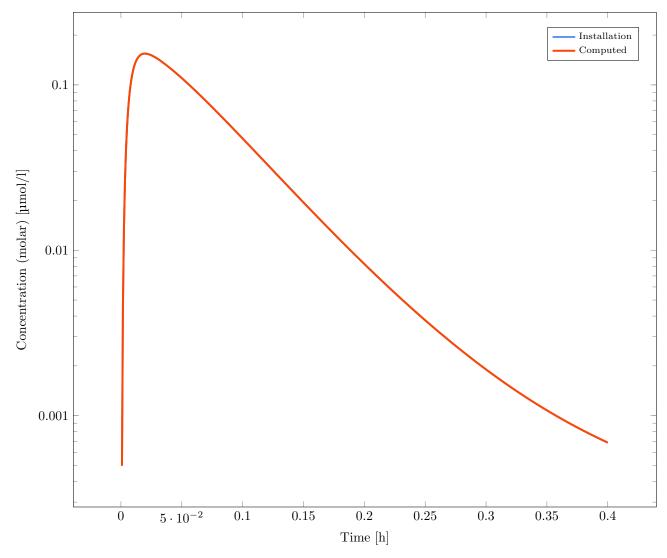
 $Simulation: \ DDI\_Multiple Combinations \textbf{-} 28\_1 st\_Uncompetitive\_Uncompetitive\_Mechanism based\_Mechanism based$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 6.43E-4

# $Organism | Peripheral Venous Blood | Mechanism Based\_4 | Plasma \ (Peripheral Venous Blood)$



**Figure 1.74** 

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.70E-4

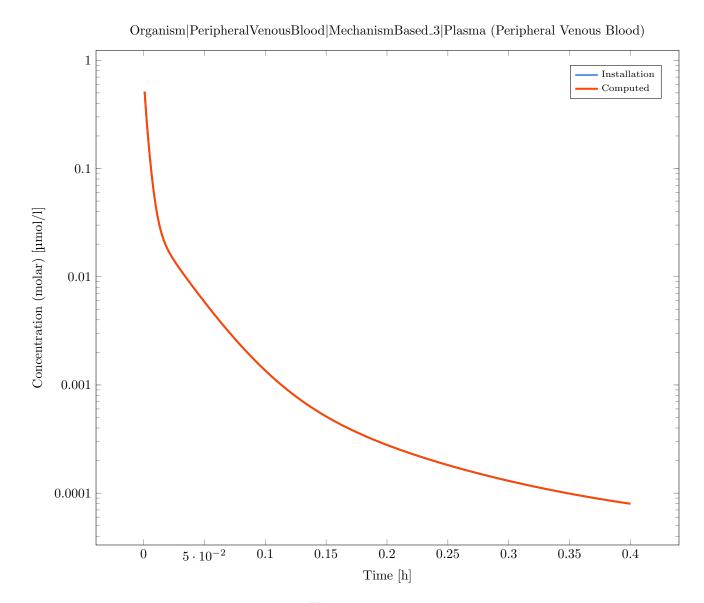
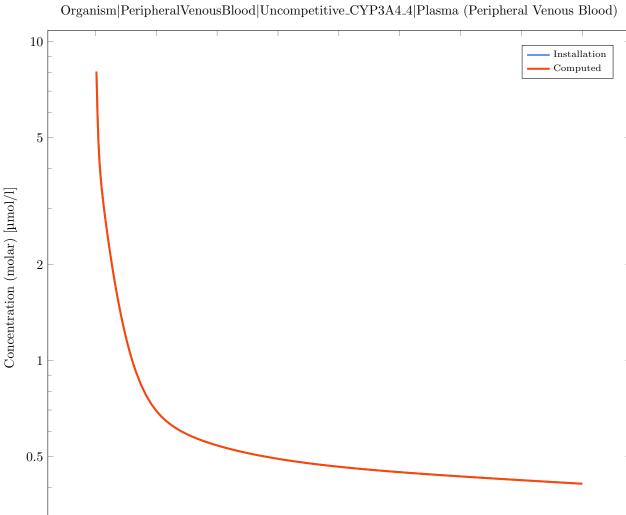


Figure 1.75

 $Output\ Path:\ Organism|PeripheralVenousBlood|Uncompetitive\_CYP3A4\_4|Plasma\ (PeripheralVenous\ Blood)$ 

Deviation: 5.75E-5



**Figure 1.76** 

0.2

Time [h]

0.25

0.3

0.35

0.4

0.15

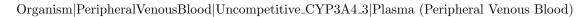
0.1

 $Output\ Path:\ Organism | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Uncompetitive\_CYP3A4\_3 | Plasma\ (Peripheral Venous Blood) | Peripheral Venous Blood | Perip$ Venous Blood)

Deviation: 1.13E-4

0

 $5 \cdot 10^{-2}$ 



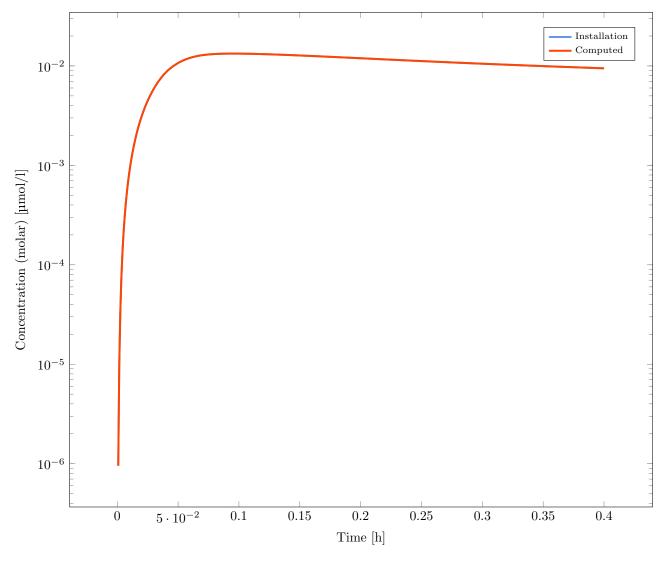
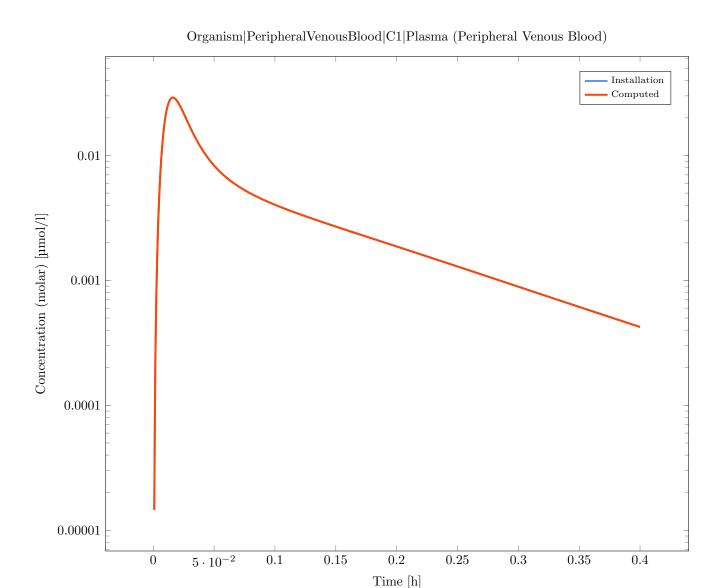


Figure 1.77

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.13E-4



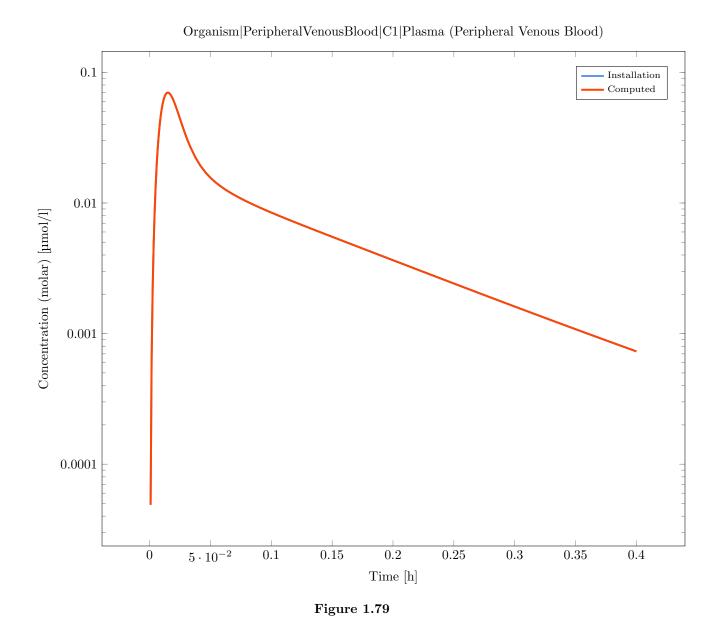
**Figure 1.78** 

 $Simulation: \ DDI\_Multiple Combinations \textbf{-} 29\_1st\_Noncompetitive\_Noncompetitive\_Mechanism based\_Mechanism based$ 

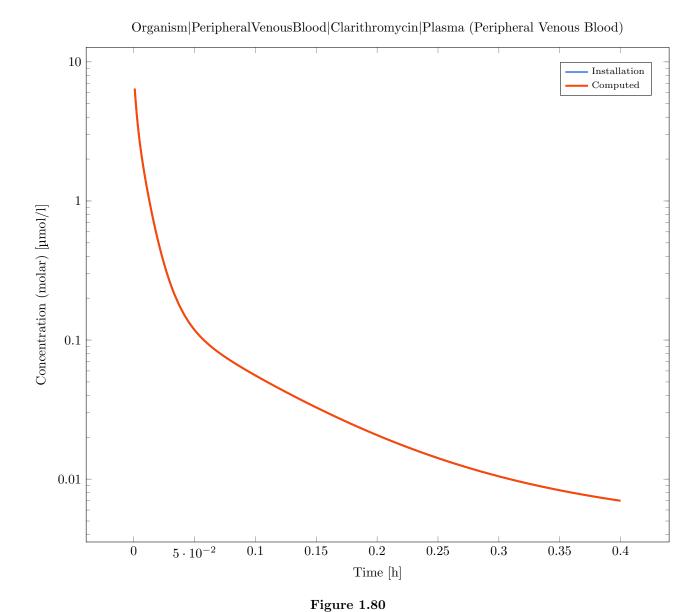
Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood)

Deviation: 2.86E-4



Output Path: Organism |Peripheral Venous<br/>Blood |Clarithromycin |Plasma (Peripheral Venous Blood)<br/> Deviation:  $2.45 \pm 2.4$ 



Output Path: Organism |Peripheral Venous<br/>Blood |Erythromycin |Plasma (Peripheral Venous Blood)<br/> Deviation: 5.52E-4

# Organism|PeripheralVenousBlood|Erythromycin|Plasma (Peripheral Venous Blood)

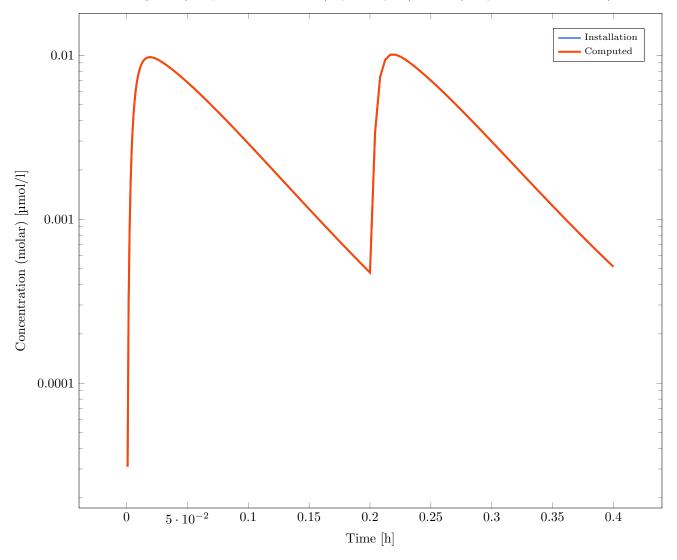
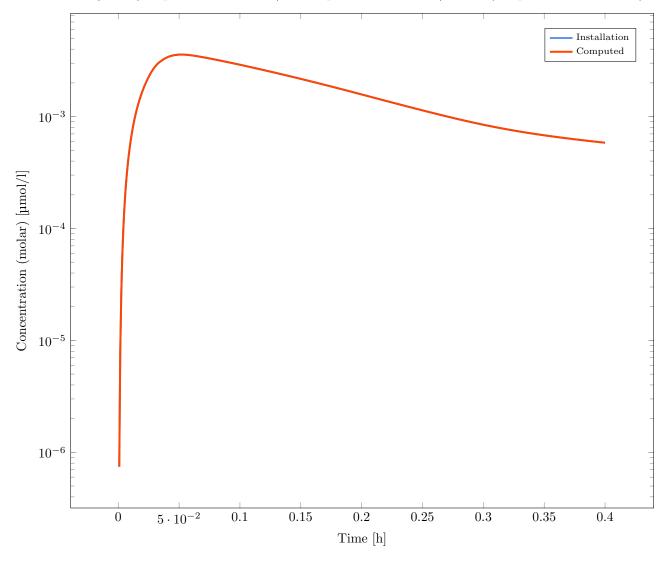


Figure 1.81

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.16E-4





**Figure 1.82** 

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_2|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 3.39E-4

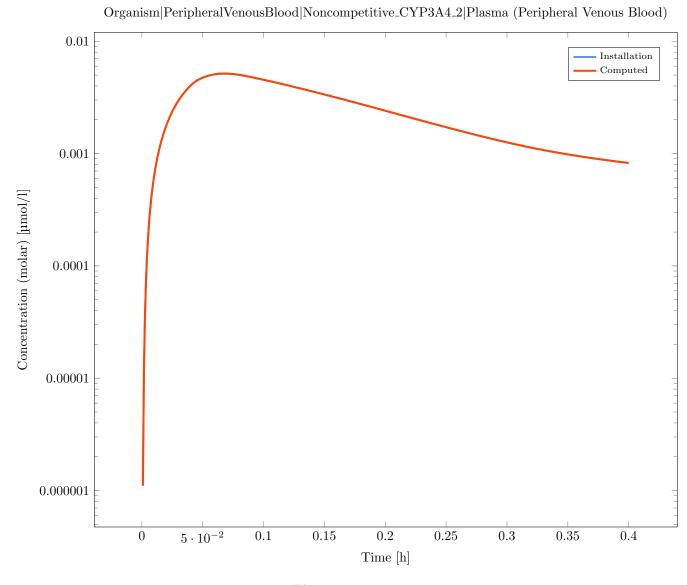


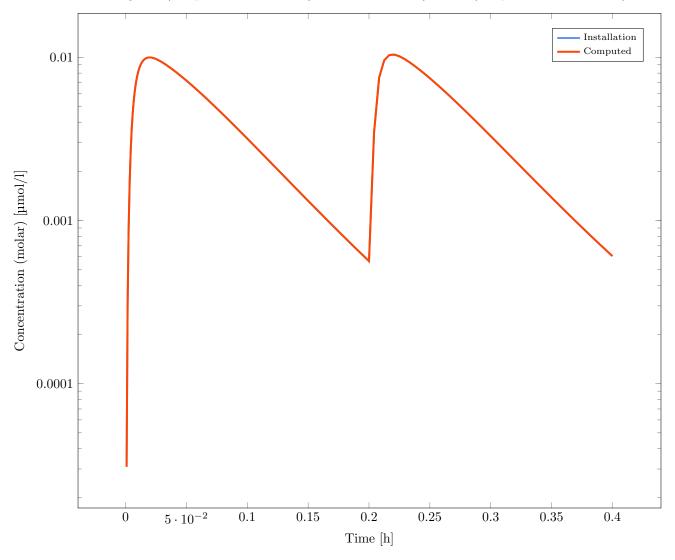
Figure 1.83

 ${\bf Simulation:\ DDI\_Multiple Combinations-30\_1st\_Mixed\_Mechanismbased\_Mechanismbased\_Mechanismbased\_Nesult\ of\ the\ validation:\ Valid$ 

 $Output\ Path:\ Organism|Peripheral Venous Blood|MechanismBased\_4|Plasma\ (Peripheral\ Venous Blood)$ 

Deviation: 5.78E-4

# Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma (Peripheral Venous Blood)



**Figure 1.84** 

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.82E-4

# $Organism | Peripheral Venous Blood | Mechanism Based\_3 | Plasma \ (Peripheral Venous Blood)$

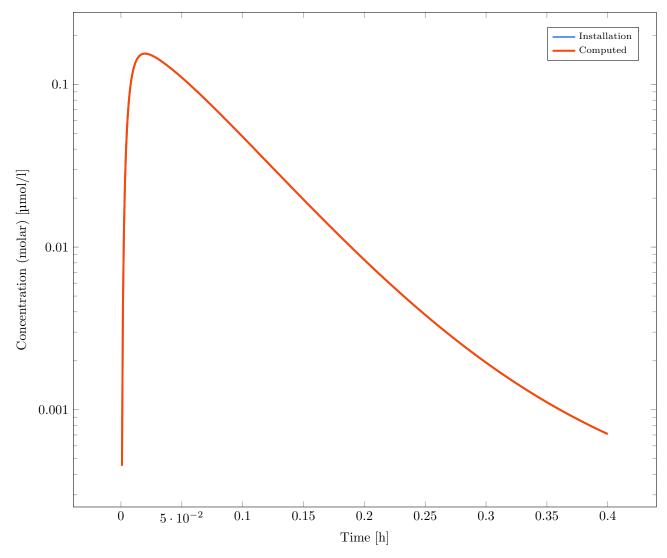
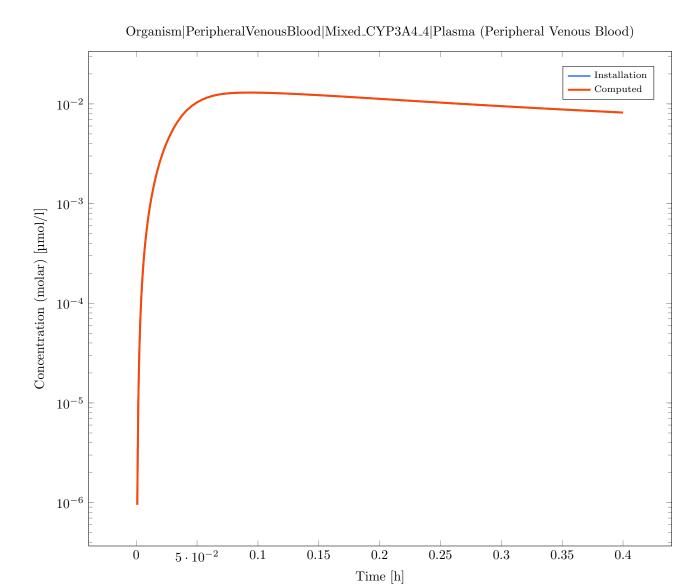


Figure 1.85

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_4|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 1.16E-4



Output Path: Organism |PeripheralVenousBlood |Mixed\_CYP3A4\_3 |Plasma (Peripheral VenousBlood)<br/> Deviation: 1.67E-4

**Figure 1.86** 

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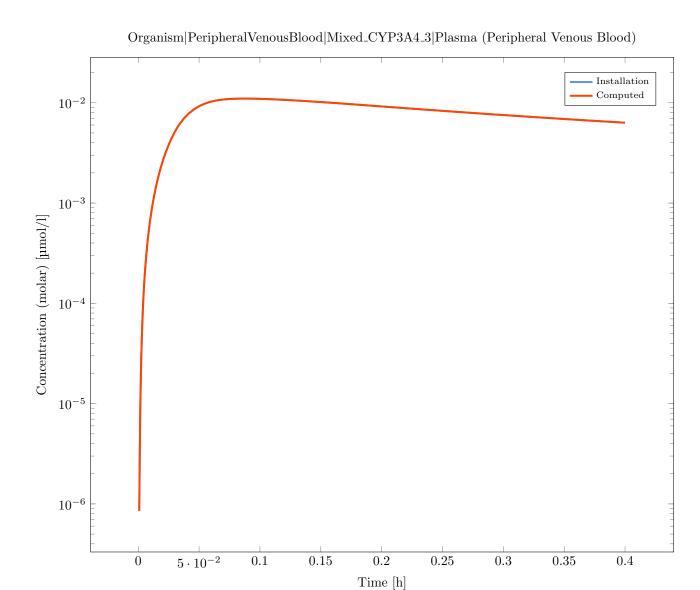
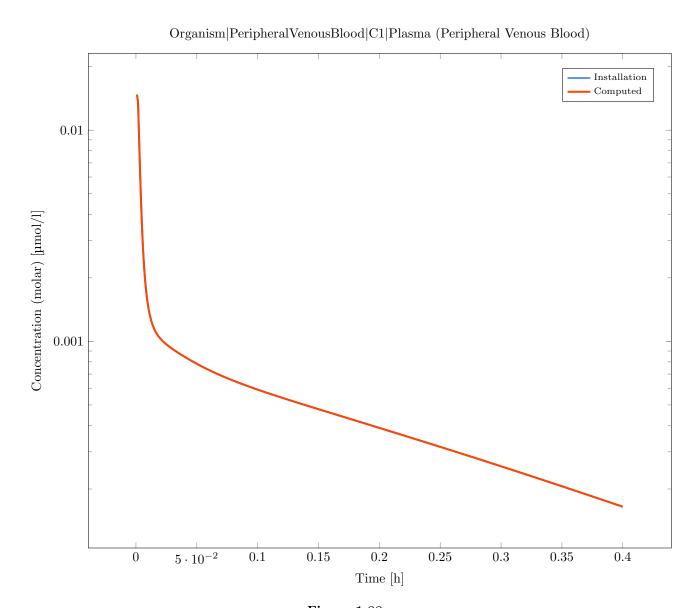


Figure 1.87

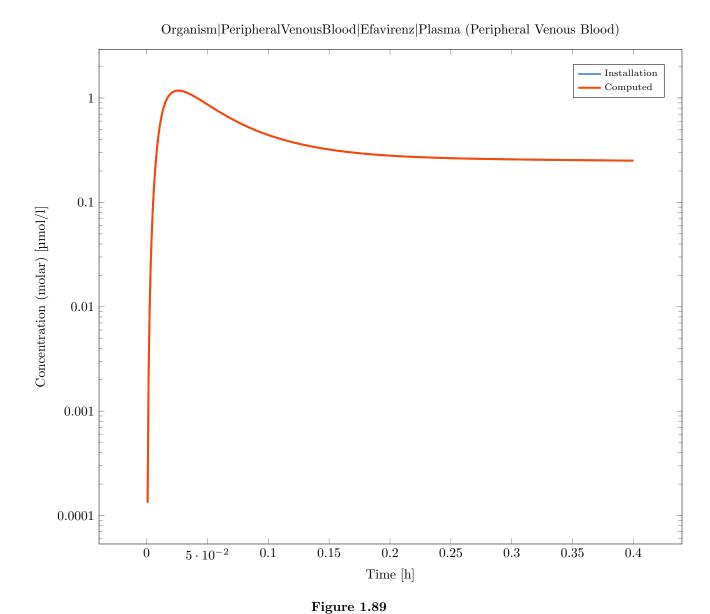
Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $6.85\hbox{E-}4$ 



**Figure 1.88** 

 ${\bf Simulation:\ DDI\_Multiple Combinations\hbox{--}31\_1st\_Mechanismbased\_Mechanismbased\_Induction\_Induction} \\ {\bf Result\ of\ the\ validation:\ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |Efavirenz |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.73E-4



Output Path: Organism |PeripheralVenousBlood |MechanismBased\_3 |Plasma (Peripheral Venous Blood)

Deviation: 5.97E-4

# Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma (Peripheral Venous Blood)

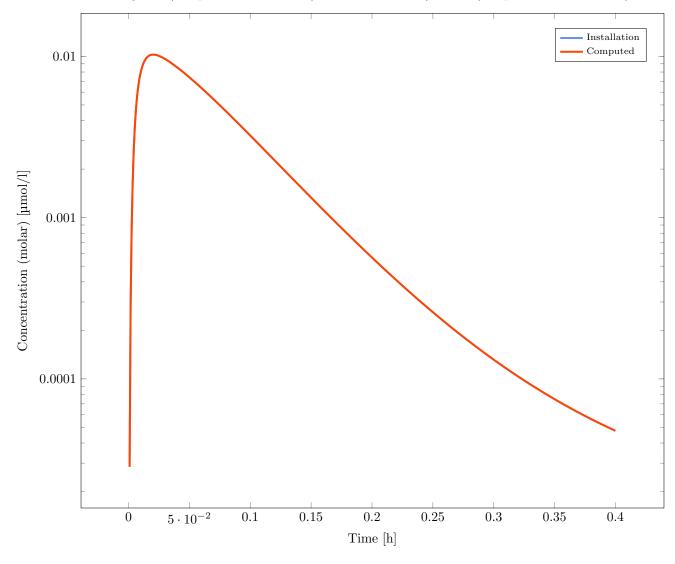


Figure 1.90

 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.99E-4

# Organism|PeripheralVenousBlood|MechanismBased\_4|Plasma (Peripheral Venous Blood)

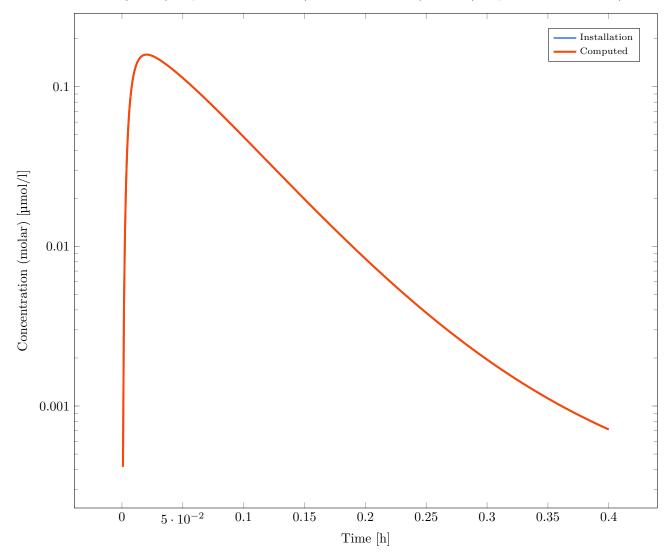


Figure 1.91

Output Path: Organism |Peripheral Venous<br/>Blood |Rifampicin |Plasma (Peripheral Venous Blood)<br/> Deviation:  $4.48\hbox{E-}4$ 

0.001

0.0001

0.00001

0

 $5\cdot 10^{-2}$ 

# Organism|PeripheralVenousBlood|Rifampicin|Plasma (Peripheral Venous Blood) Installation Computed 0.1 0.01 Concentration (molar) $[\mu]$

Figure 1.92

0.15

0.2

Time [h]

0.25

0.3

0.35

0.4

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood) Deviation: 5.81E-4

0.1

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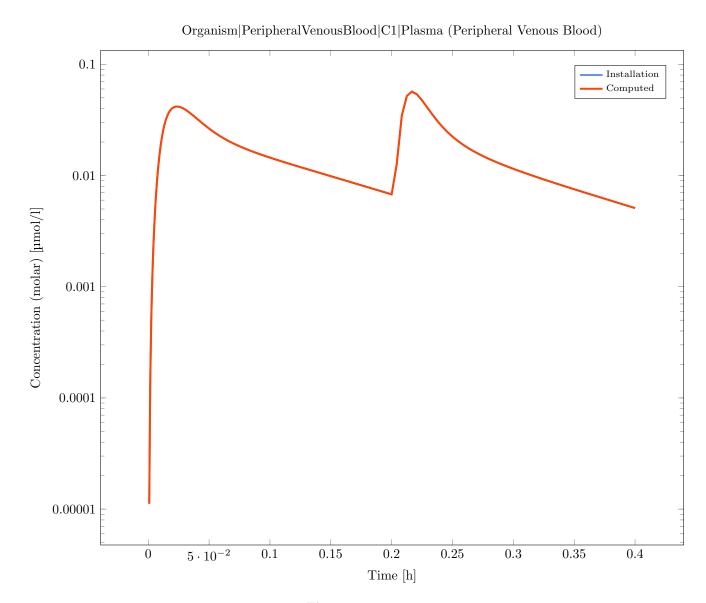


Figure 1.93

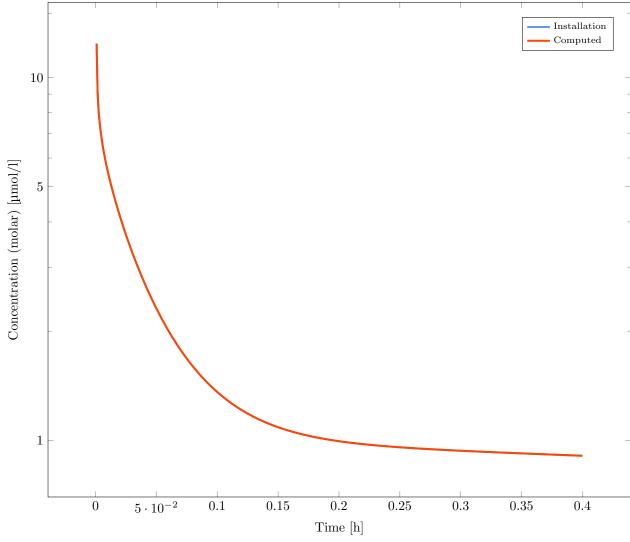
 $Simulation: \ DDI\_MultipleCombinations-32\_1st\_All\_DDI\_Types$ 

Result of the validation: Valid

 $Output\ Path:\ Organism | Peripheral Venous Blood | Efavirenz | Plasma\ (Peripheral\ Venous\ Blood)$ 

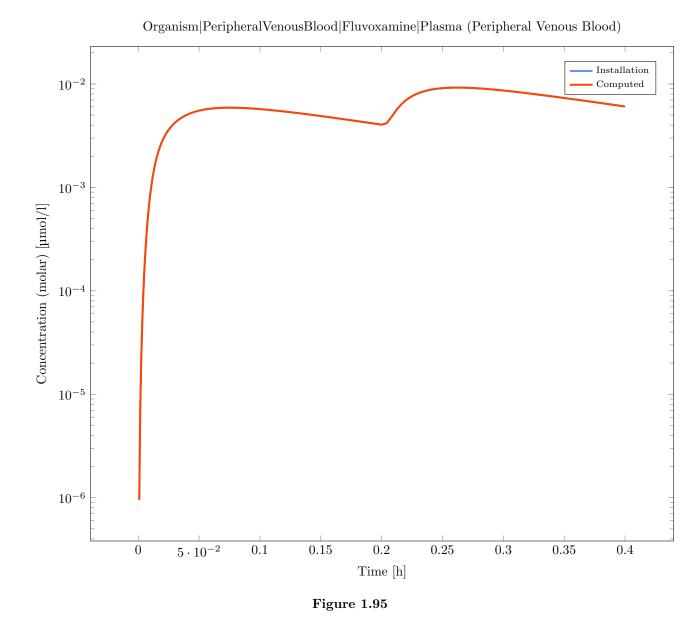
Deviation: 1.92E-4

# Organism|PeripheralVenousBlood|Efavirenz|Plasma (Peripheral Venous Blood)



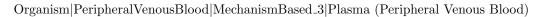
**Figure 1.94** 

Output Path: Organism |Peripheral Venous<br/>Blood |Fluvoxamine |Plasma (Peripheral Venous Blood)<br/> Deviation: 3.14E-4



 $Output\ Path:\ Organism|PeripheralVenousBlood|MechanismBased\_3|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 6.03E-4



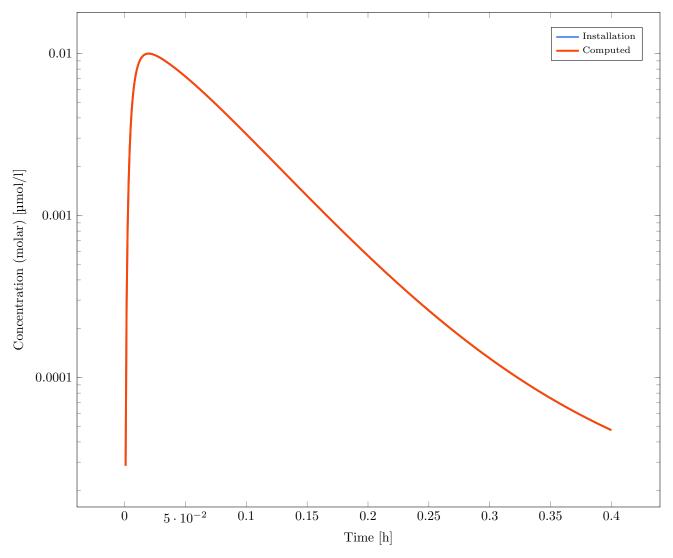


Figure 1.96

 $Output\ Path:\ Organism|PeripheralVenousBlood|Mixed\_CYP3A4\_3|Plasma\ (Peripheral\ VenousBlood)$ 

Deviation: 4.10E-4

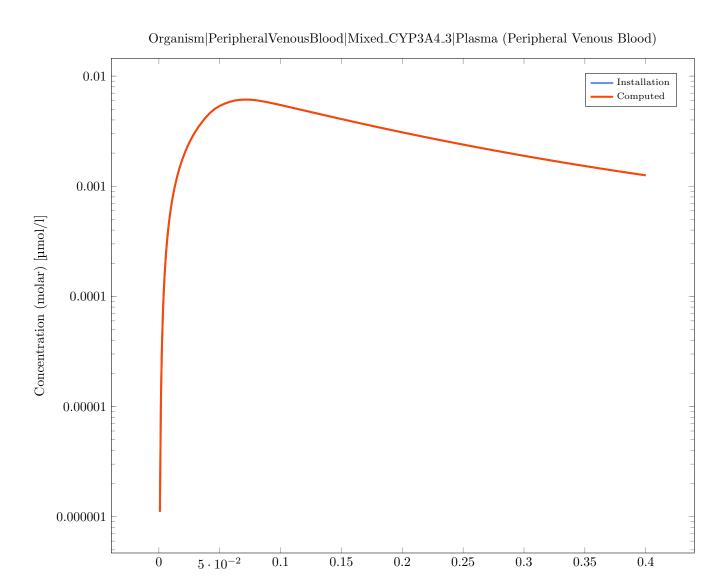
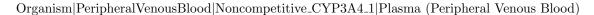


Figure 1.97

Time [h]

 $Output\ Path:\ Organism|Peripheral Venous Blood|Noncompetitive\_CYP3A4\_1|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 5.19E-4



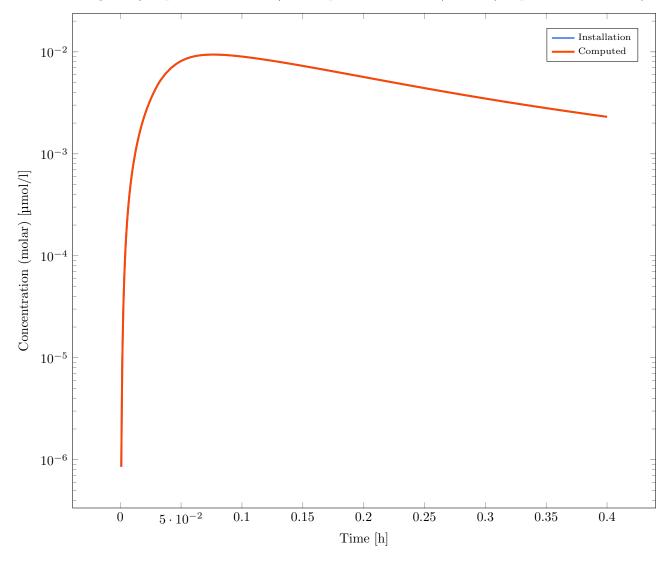
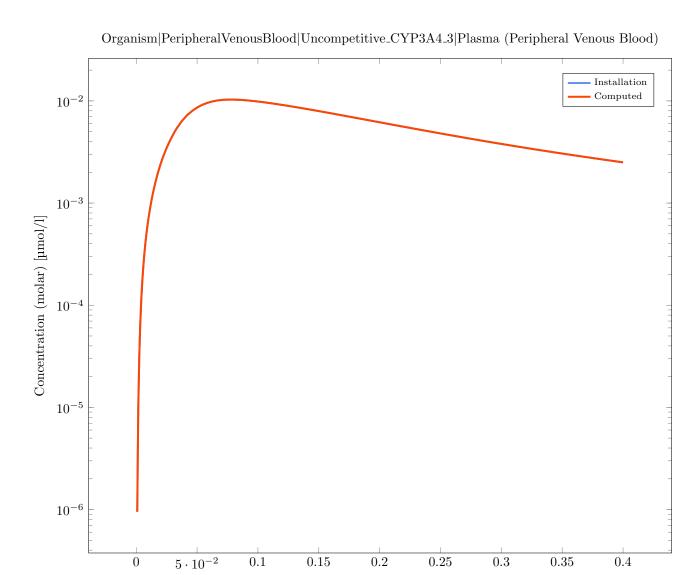


Figure 1.98

 $Output\ Path:\ Organism|PeripheralVenousBlood|Uncompetitive\_CYP3A4\_3|Plasma\ (PeripheralVenous\ Blood)$ 

Deviation: 4.97E-4

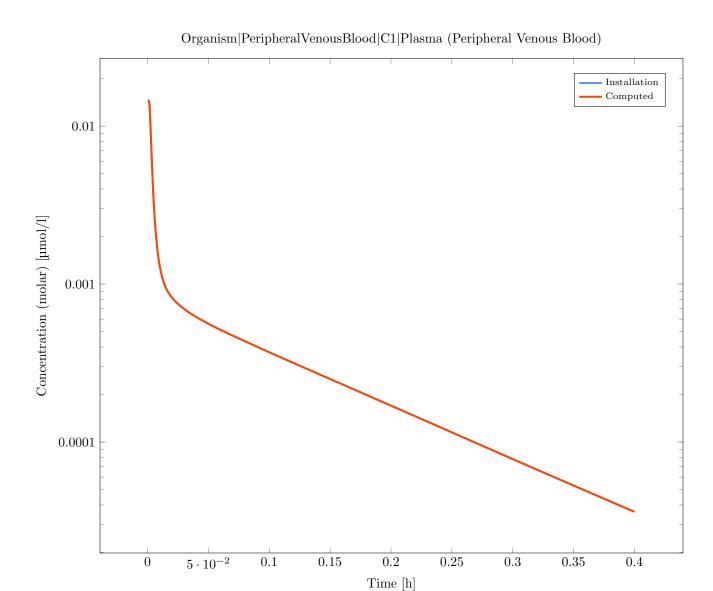


Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $6.90\hbox{E-}4$ 

Time [h]

Figure 1.99

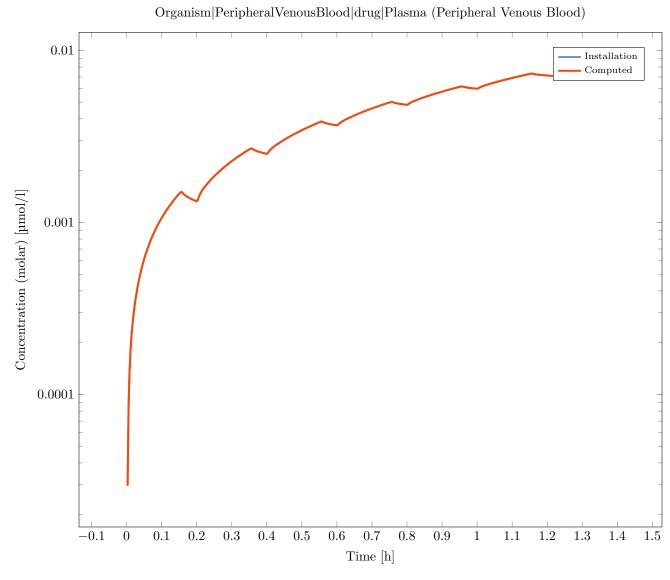
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**Figure 1.100** 

 $\begin{tabular}{ll} Simulation: $Dog\_MultiORAL\_12\_12\_Dissolved-Dog\_MultiORAL\_12\_12\_Dissolved \\ Result of the validation: Valid \\ \end{tabular}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0



**Figure 1.101** 

 $\begin{tabular}{ll} \bf Simulation: \begin{tabular}{ll} \bf Dog\_MultiORAL\_24\_Dissolved-Dog\_MultiORAL\_24\_$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

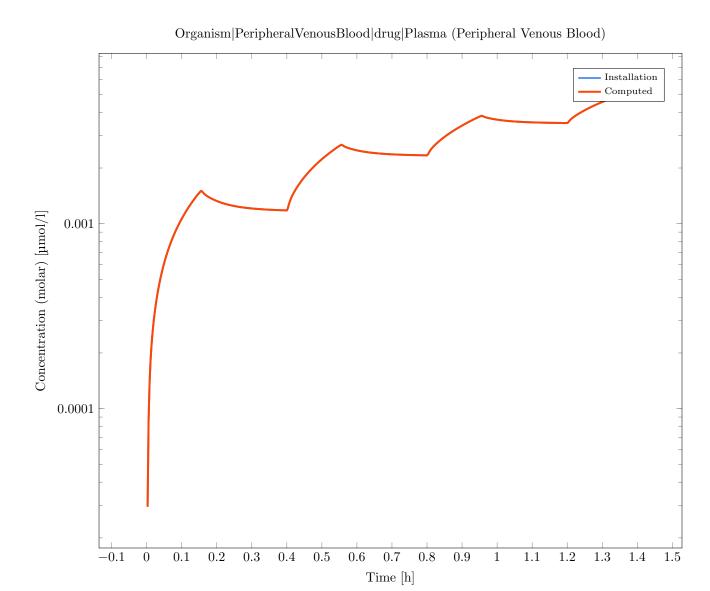
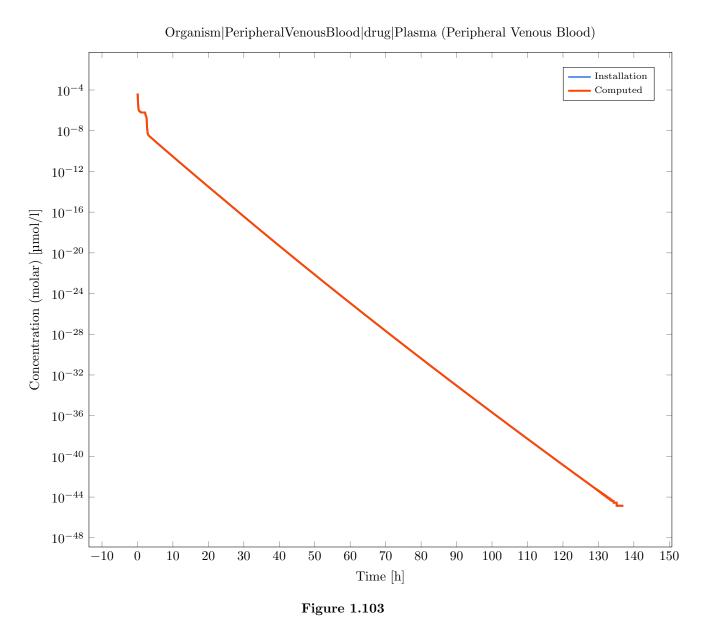


Figure 1.102

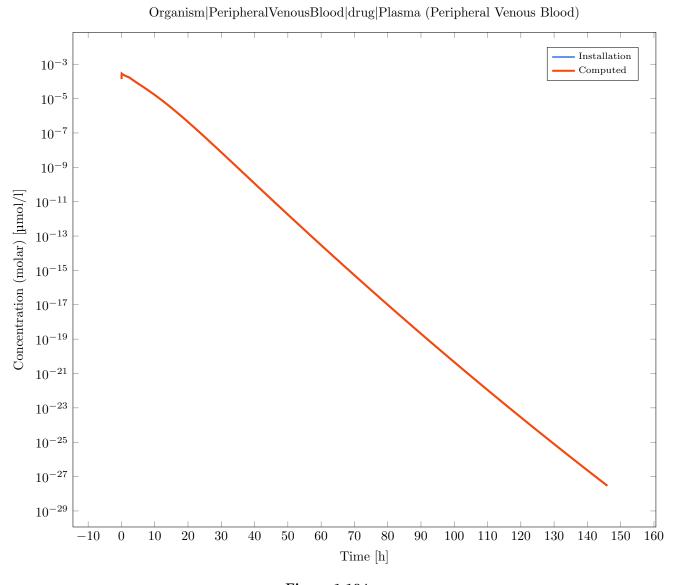
 $\begin{tabular}{ll} \bf Simulation: European\_SingleORAL\_Age\_0\_CYP3A4-European\_SingleORAL\_Age\_0\_CYP3$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $1.56\hbox{E-}5$ 



 ${\bf Simulation: European\_SingleORAL\_Age\_0\_GFR-European\_SingleORAL\_Age\_0\_GFR} \\ {\bf Result of the \ validation: \ Valid}$ 

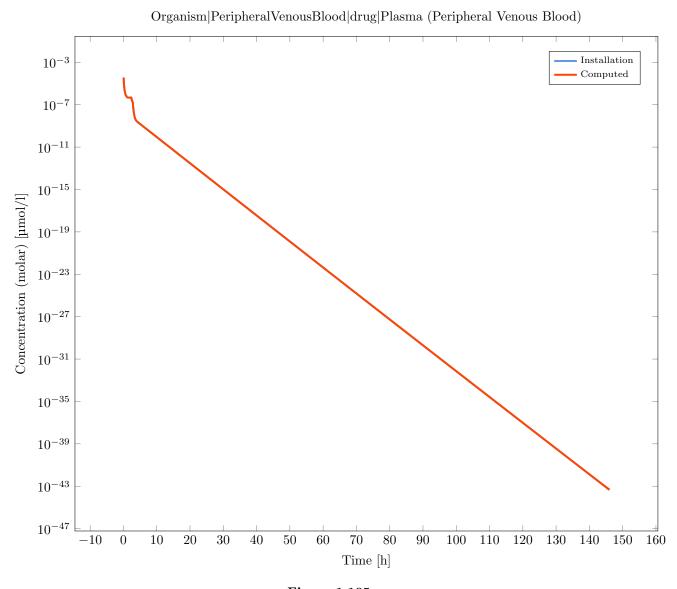
Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.68E-5



**Figure 1.104** 

 $\begin{tabular}{ll} \bf Simulation: European\_SingleORAL\_Age\_1\_CYP3A4-European\_SingleORAL\_Age\_1\_CYP3$ 

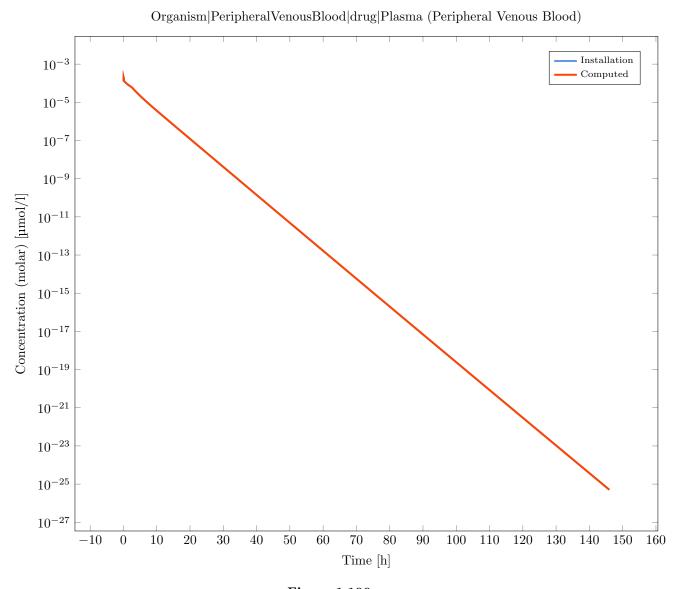
Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/>  $1.54 \pm 6$ 



 ${\bf Figure~1.105}$ 

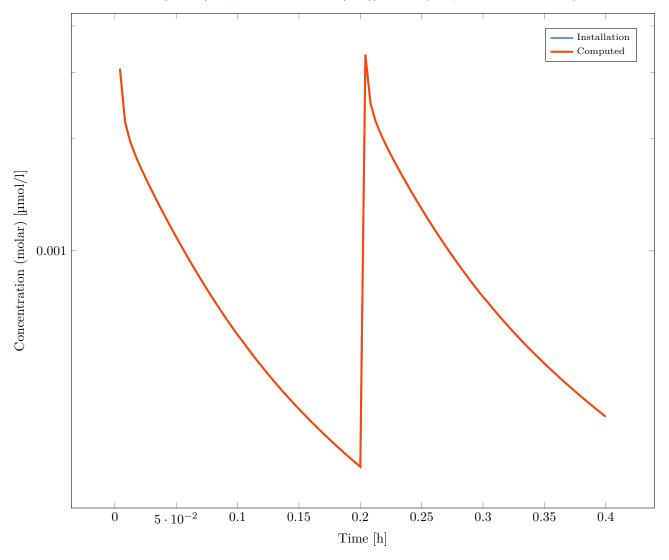
 ${\bf Simulation: European\_SingleORAL\_Age\_1\_GFR-European\_SingleORAL\_Age\_1\_GFR} \\ {\bf Result of the \ validation: \ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.19E-7



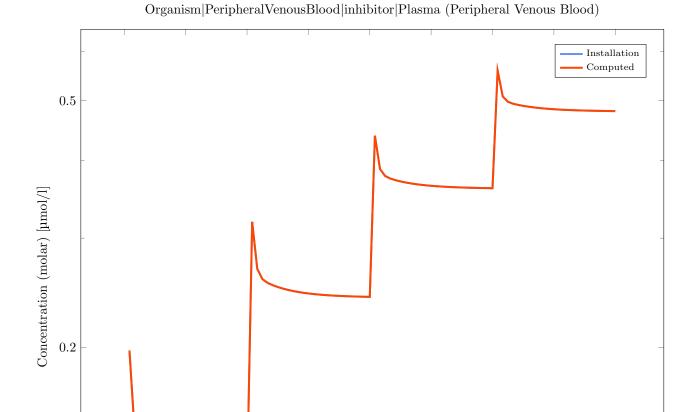
 ${\bf Figure~1.106}$ 

Simulation: Human\_CompetitiveInhibition-Human\_CompetitiveInhibition Result of the validation: Valid



 $Figure \ 1.107$ 

Output Path: Organism |PeripheralVenousBlood |<br/>inhibitor |Plasma (Peripheral Venous Blood) | Deviation:<br/> 0



**Figure 1.108** 

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: \ Human\_ICRP\_AGP-01\_ICRP\_0y\_Male$ 

 $5 \cdot 10^{-2}$ 

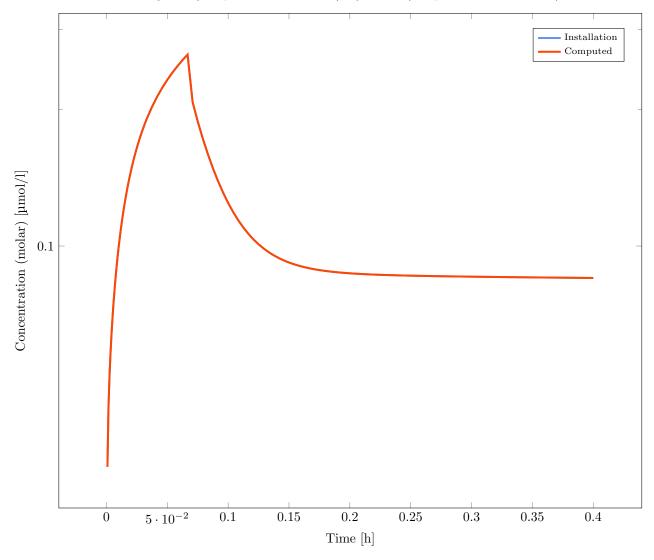
Result of the validation: Valid

0

Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

0.15

0.1



 $Figure \ 1.109$ 

 $Simulation: \ Human\_ICRP\_AGP-02\_ICRP\_0.05y\_Female$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

# Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood) | Installation | Computed | Com

 ${\bf Figure~1.110}$ 

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: \ Human\_ICRP\_AGP-03\_ICRP\_0.18y\_Male$ 

 $5\cdot 10^{-2}$ 

0.1

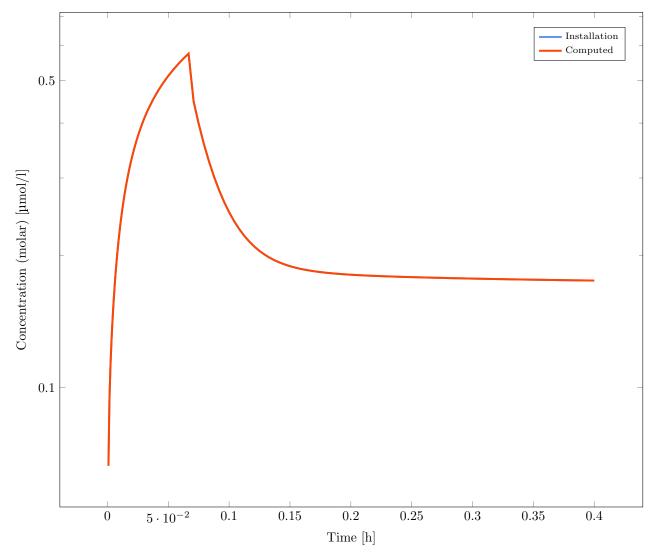
Result of the validation: Valid

0

 $Output\ Path:\ Organism|PeripheralVenousBlood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

0.15



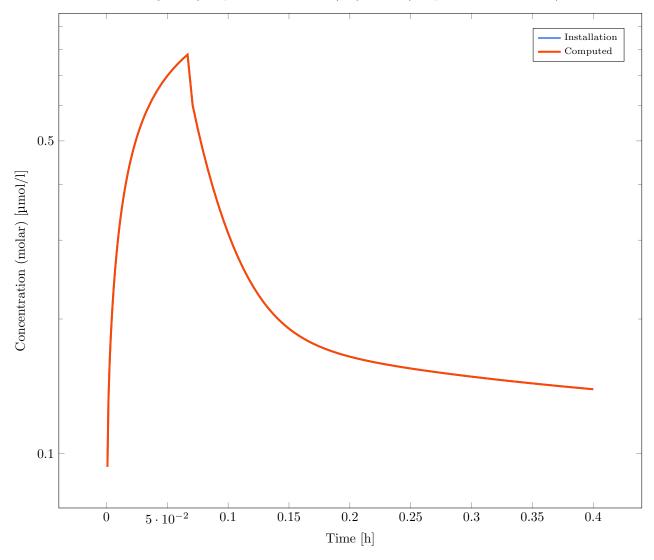


**Figure 1.111** 

Simulation: Human\_ICRP\_AGP-04\_ICRP\_1y\_Female

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 



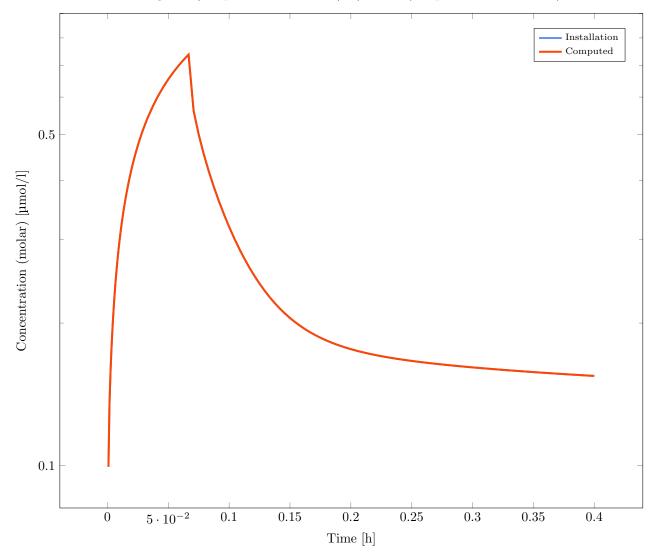
**Figure 1.112** 

 $Simulation: \ Human\_ICRP\_AGP-05\_ICRP\_12y\_Male$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood)

Deviation: 1.50E-4

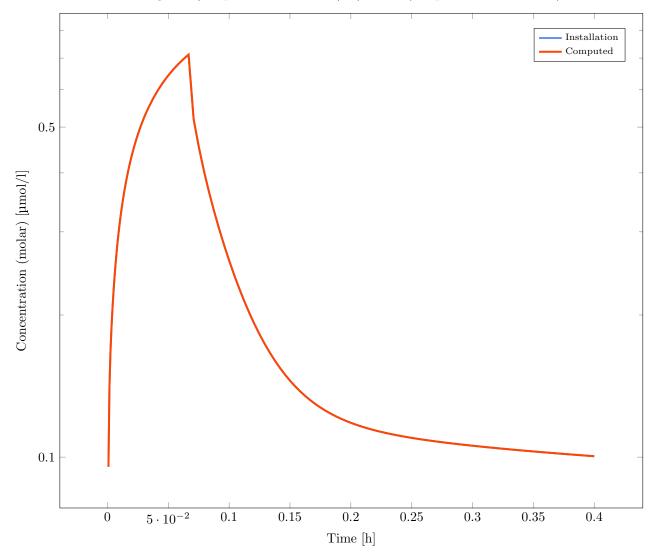


**Figure 1.113** 

 $Simulation: \ Human\_ICRP\_AGP-06\_ICRP\_30y\_Female$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 

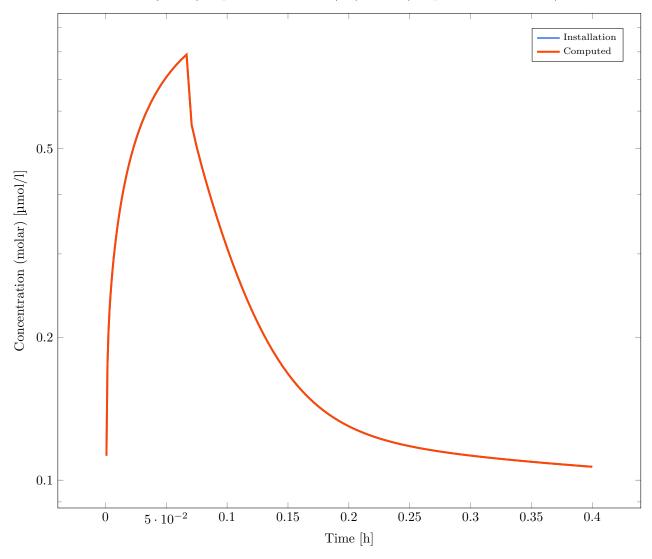


**Figure 1.114** 

 $Simulation: \ Human\_ICRP\_AGP-07\_ICRP\_100y\_Male$ 

Result of the validation: Valid

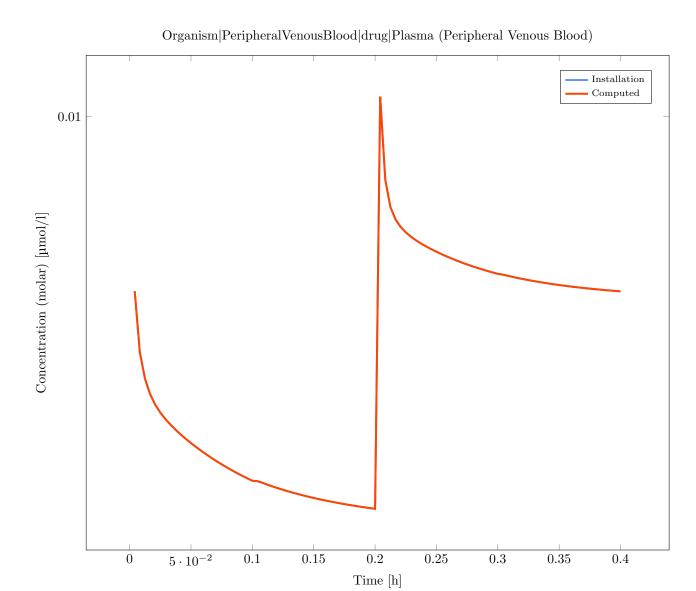
 $Output\ Path:\ Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral\ Venous\ Blood)$ 



**Figure 1.115** 

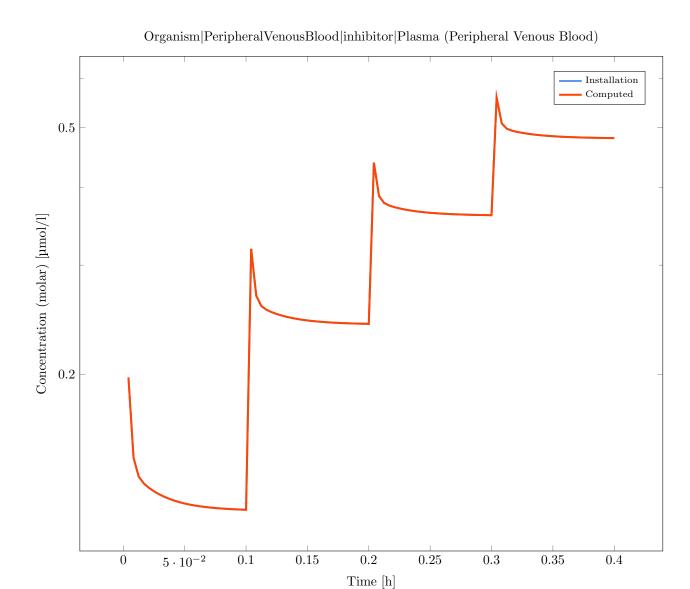
 ${\bf Simulation: \ Human\_Irreversible Inhibition-Human\_Irreversible Inhibition} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 

 $Output\ Path:\ Organism|Peripheral Venous Blood|drug|Plasma\ (Peripheral\ Venous\ Blood)$ 



Output Path: Organism |PeripheralVenousBlood |<br/>inhibitor |Plasma (Peripheral Venous Blood) | Deviation:<br/> 0

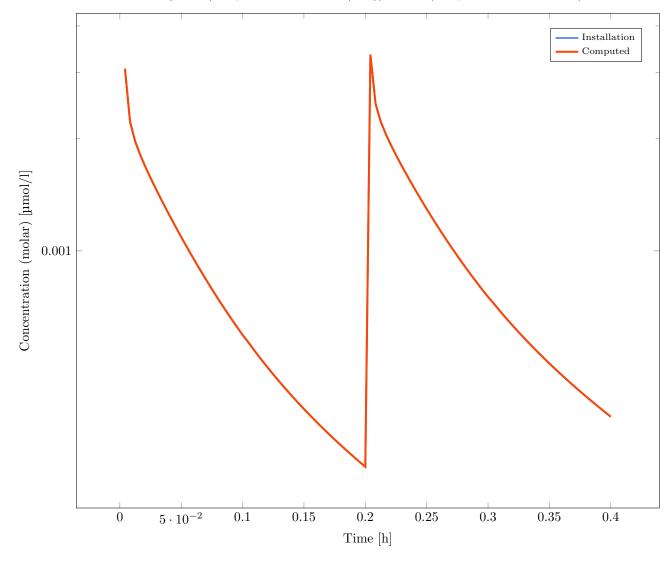
**Figure 1.116** 



**Figure 1.117** 

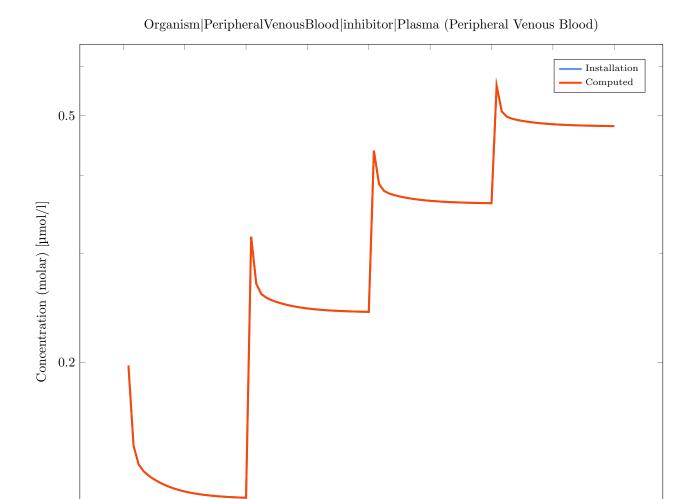
 $Simulation: \ Human\_MixedInhibition-Human\_MixedInhibition$ 

Result of the validation: Valid



**Figure 1.118** 

Output Path: Organism |PeripheralVenousBlood |<br/>inhibitor |Plasma (Peripheral Venous Blood) | Deviation:<br/> 0



**Figure 1.119** 

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: \ Human\_MultiIV\_6\_6\_12-Human\_MultiIV\_6\_6\_12$ 

0.1

Result of the validation: Valid

0

 $5 \cdot 10^{-2}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

0.15



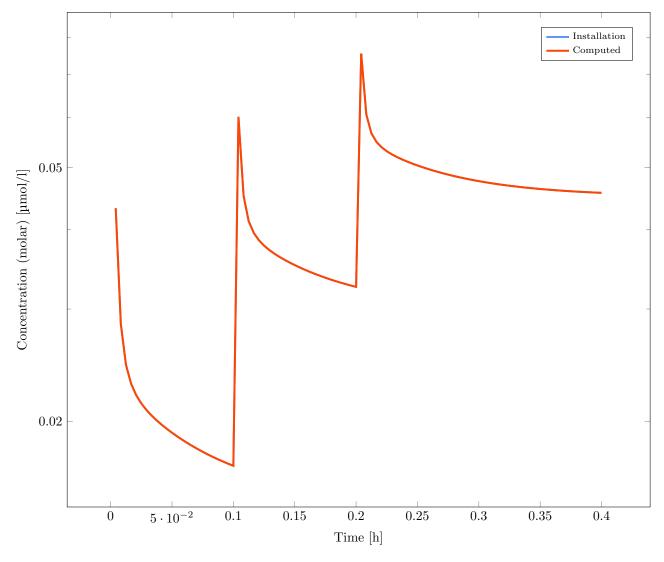


Figure 1.120

 $Simulation: \ Human\_MultiORAL\_6\_12\_12\_Dissolved-Human\_6\_12\_Dissolved-Human\_6\_12\_$ 

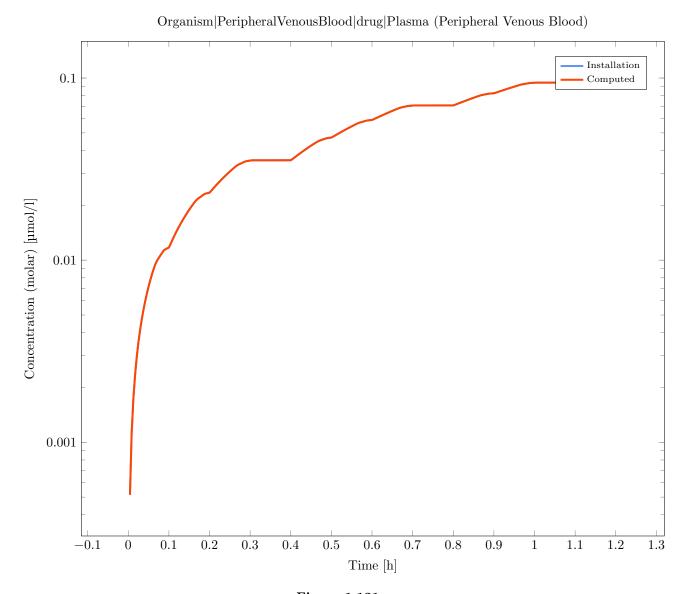


Figure 1.121

 $Simulation: Human\_MultiORAL\_6\_12\_12\_Dissolved-Human\_MultiORAL\_6\_12\_12\_Dissolved\_absorption\_sink\_conditions$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|drug|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 1.03E-7



Figure 1.122

 $Simulation: Human\_MultiORAL\_6\_12\_12\_Dissolved-Human\_MultiORAL\_6\_12\_12\_Dissolved\_EHC\_continuous\_fraction\_0.5$ 

Result of the validation: Valid



 ${\bf Figure~1.123}$ 

 $Simulation: Human\_MultiORAL\_6\_12\_12\_Dissolved-Human\_MultiORAL\_6\_12\_12\_Dissolved\_EHC\_continuous\_fraction\_1$ 

Result of the validation: Valid

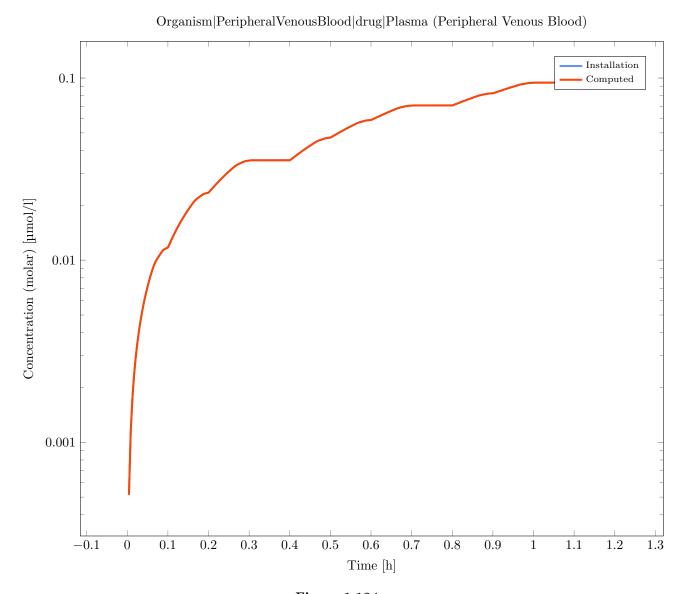
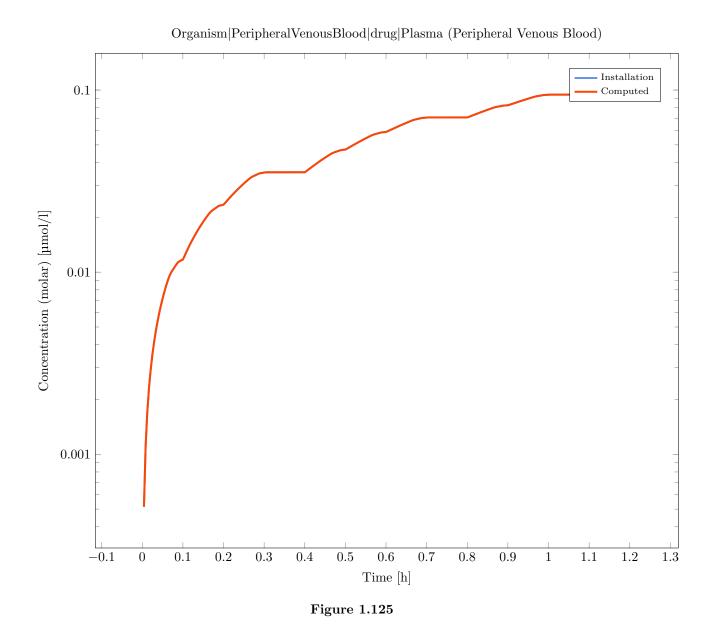


Figure 1.124

Simulation: Human\_MultiORAL\_6\_12\_12\_Dissolved-Human\_MultiORAL\_6\_12\_12\_Dissolved\_pKadependent penalty factor Result of the validation: Valid



 $Simulation: \ Human\_MultiORAL\_6\_12\_12\_Dissolved-Human\_MultiORAL\_6\_12\_12\_Dissolved\_solubility \\ Result of the validation: \ Valid$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.17E-7

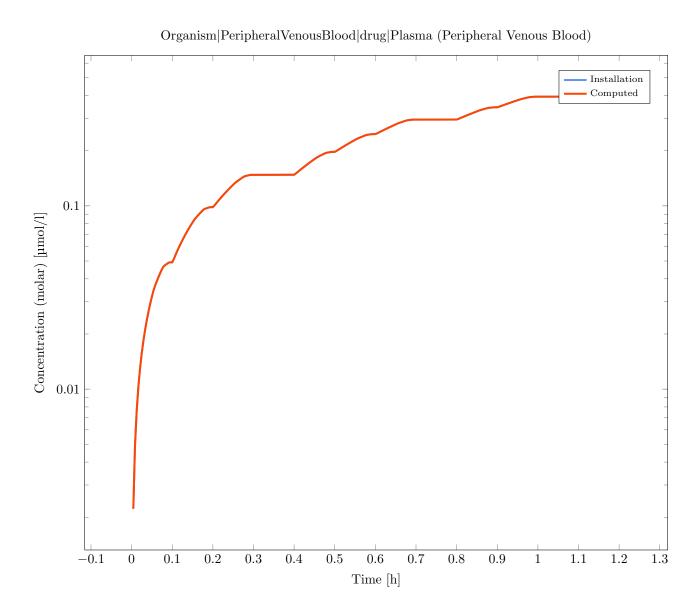


Figure 1.126

 $Simulation: \ Human\_MultipleIV\_Binding-Human\_MultipleIV\_Binding$ 

Result of the validation: Valid

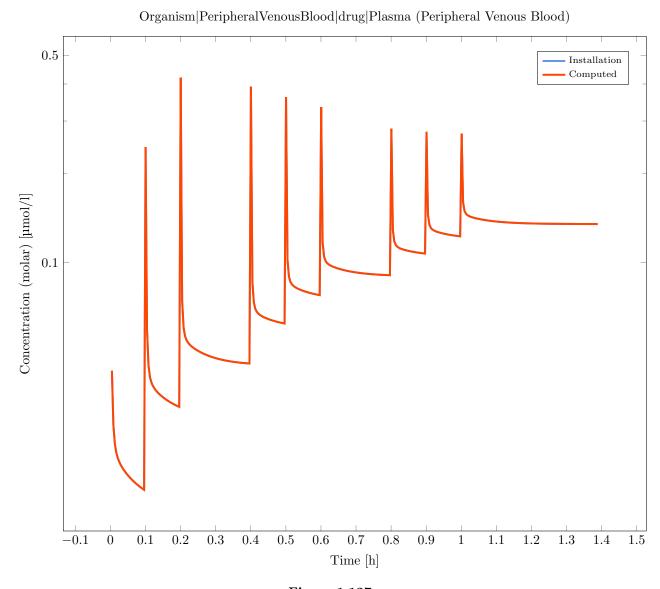


Figure 1.127

 ${\bf Simulation: \ Human\_Multiple IV\_Efflux Basolateral-Human\_Multiple IV\_Efflux Basolateral-Result \ of the \ validation: \ Valid$ 

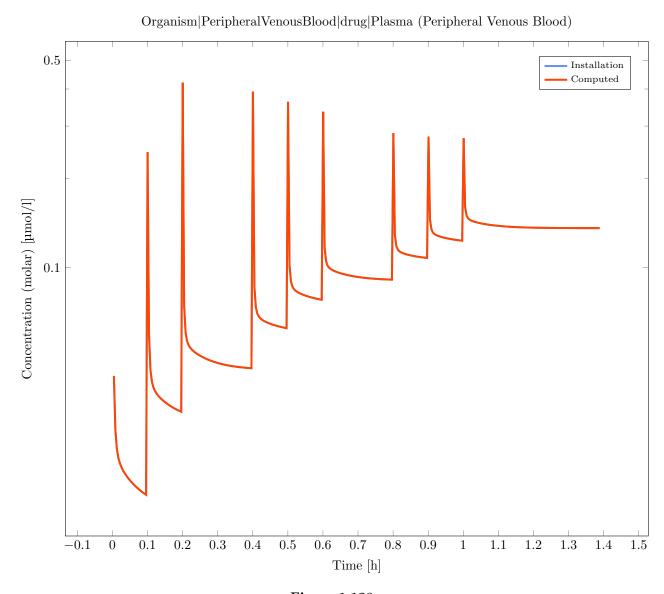


Figure 1.128

 $Simulation: \ Human\_MultipleIV\_Efflux-Human\_MultipleIV\_Efflux$ 

Result of the validation: Valid

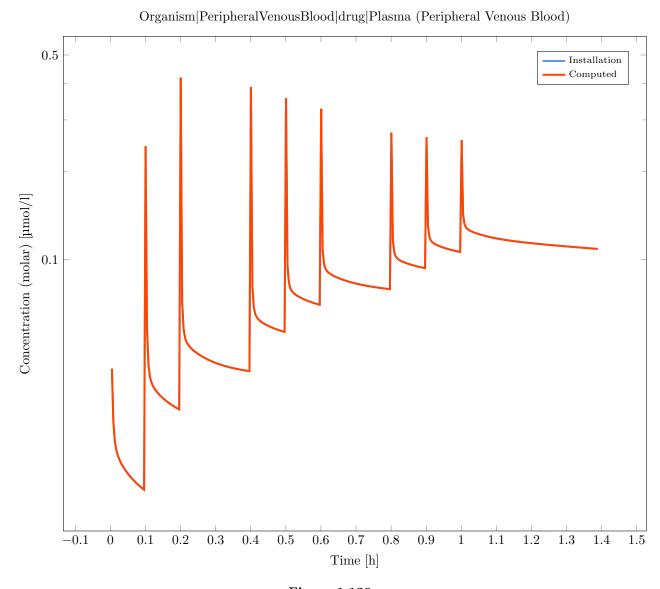
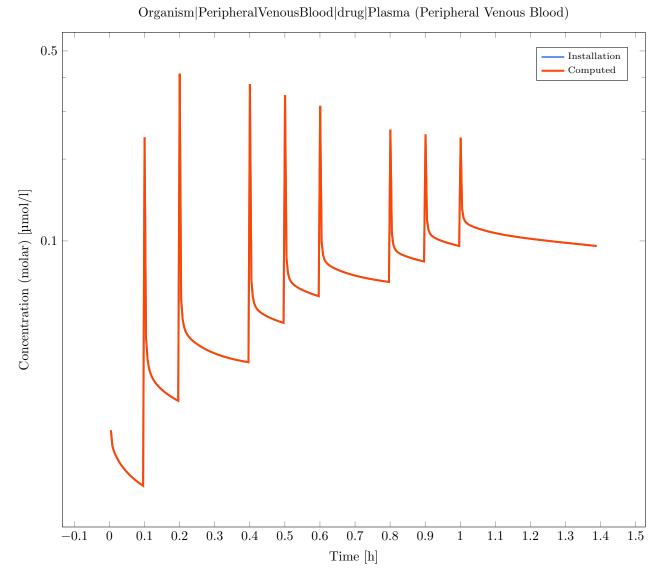


Figure 1.129

 ${\bf Simulation: \ Human\_Multiple IV\_Influx Basolateral-Human\_Multiple IV\_Influx Basolateral-Result \ of the \ validation: \ Valid$ 



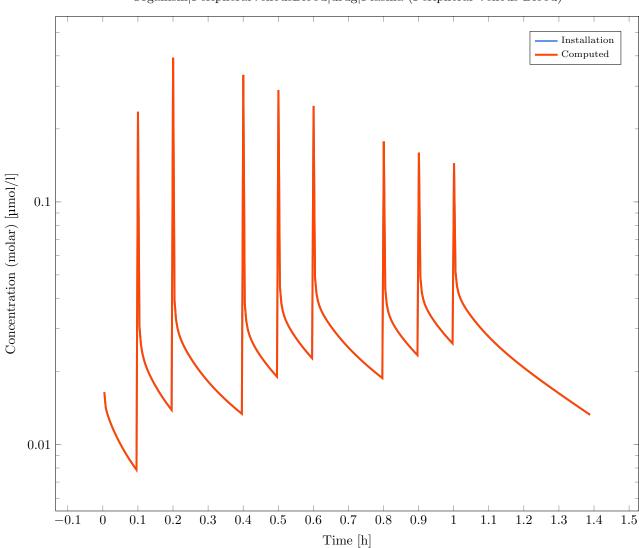
 ${\bf Figure~1.130}$ 

 $Simulation: \ Human\_MultipleIV\_Influx-Human\_MultipleIV\_ActiveInflux$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

Deviation: 3.47E-5



Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

**Figure 1.131** 

 ${\bf Simulation: \ Human\_Multiple IV\_Metabolizm Binding-Human\_Multiple IV\_Metabolizm Binding \ Result \ of \ the \ validation: \ Valid }$ 

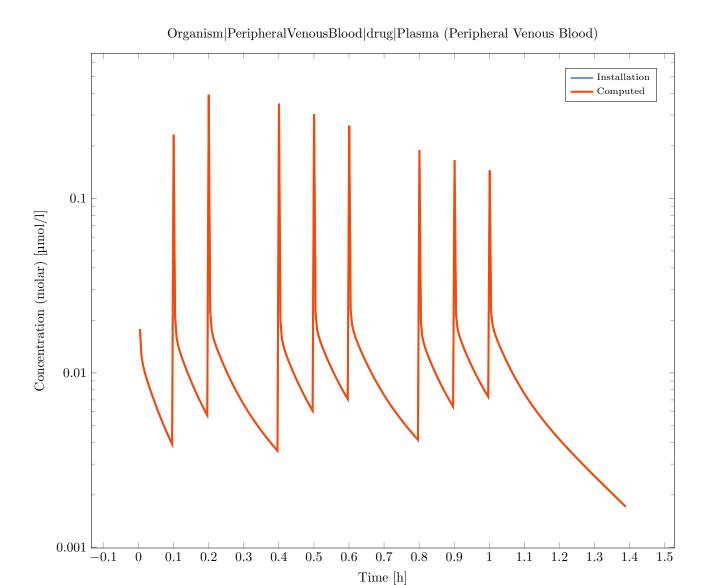


Figure 1.132

 ${\bf Simulation: \ Human\_Multiple IV\_Metabolizm-Human\_Multiple IV\_Metabolizm.} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 

1.3

1.4

1.5

## Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood) Installation Computed 0.1 Concentration (molar) $[\mu]$ 0.01 0.0010.2 0.3 0.8 0.9 1.1 1.2

**Figure 1.133** 

0.6

0.7

Time [h]

 $Simulation: \ Human\_MultipleIV\_PGPB a solateral-Human\_MultipleIV\_PGPB a$ Result of the validation: Valid

0.5

0.4

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood) Deviation: 0

-0.1

0

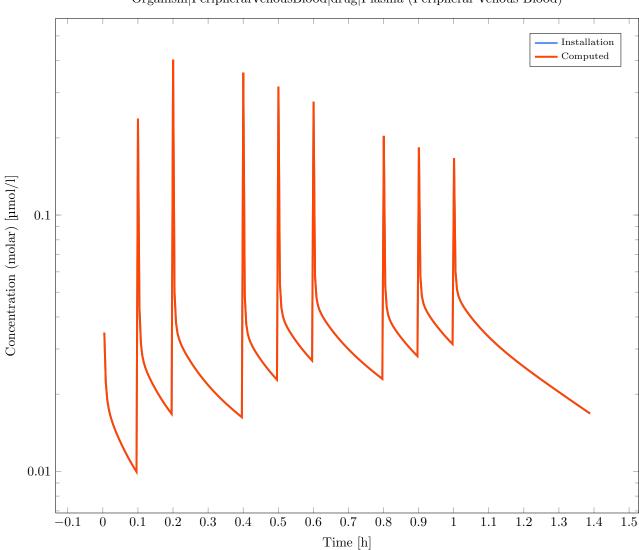
0.1



**Figure 1.134** 

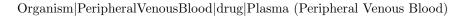
 $Simulation: \ Human\_MultipleIV\_PGP-Human\_MultipleIV\_PGP$ 

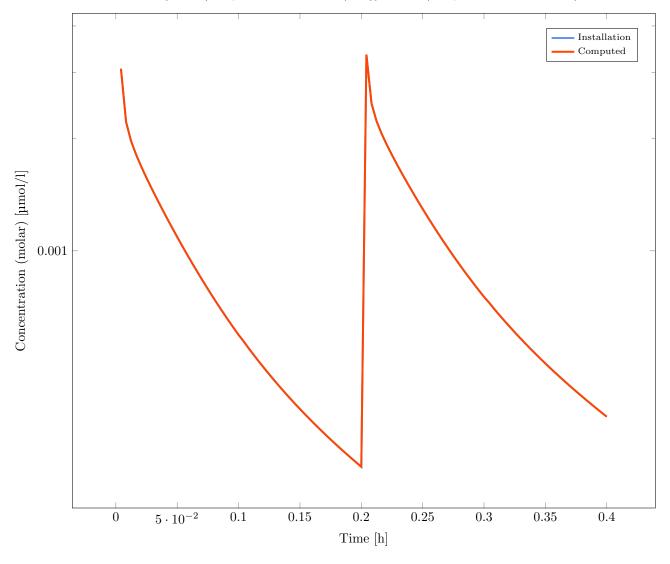
Result of the validation: Valid



**Figure 1.135** 

 ${\bf Simulation: \ Human\_NonCompetitive Inhibition-Human\_NonCompetitive Inhibition} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 





 $Figure \ 1.136$ 

Output Path: Organism |PeripheralVenousBlood |<br/>inhibitor |Plasma (Peripheral Venous Blood) | Deviation:<br/> 0

## Organism|PeripheralVenousBlood|inhibitor|Plasma (Peripheral Venous Blood) 0.5 0.2 0.2

**Figure 1.137** 

0.2

Time [h]

0.25

0.35

0.4

0.3

 $Simulation: \ Human\_Oral\_BiDaily\_Table Formulation-S1\_suspension$ 

0.1

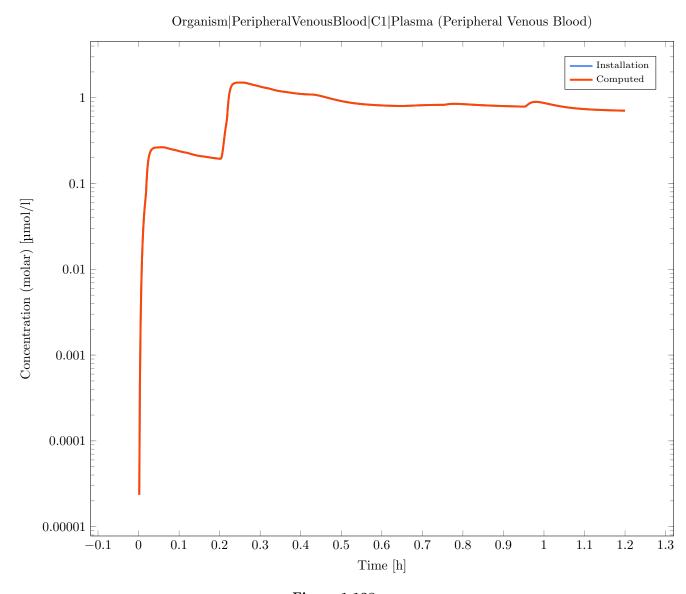
Result of the validation: Valid

0

 $5 \cdot 10^{-2}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

0.15



 ${\bf Figure~1.138}$ 

 $Simulation: \ Human\_Oral\_BiDaily\_Table Formulation-S2\_NoSuspension$ 

Result of the validation: Valid

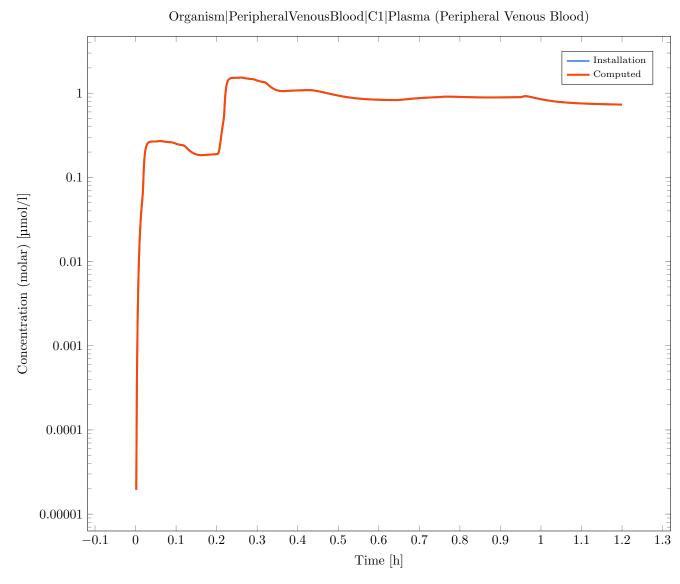


Figure 1.139

Simulation: Human\_pH\_SolubilityTable-S1\_Table

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood)

Deviation: 9.55E-6

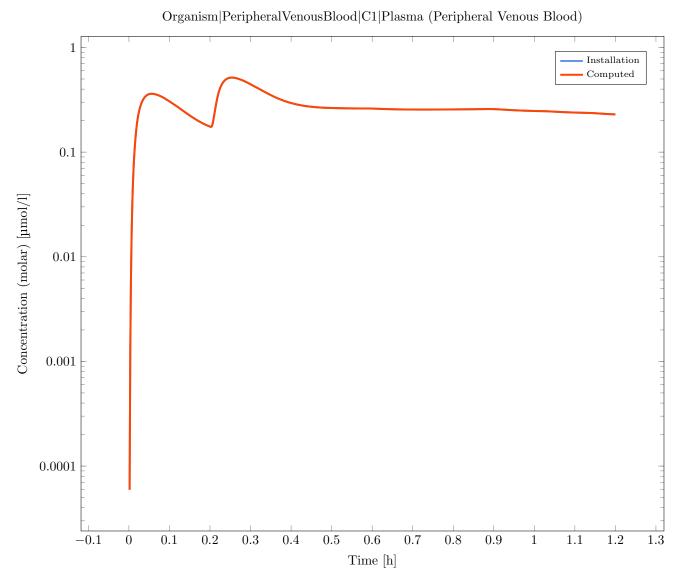


Figure 1.140

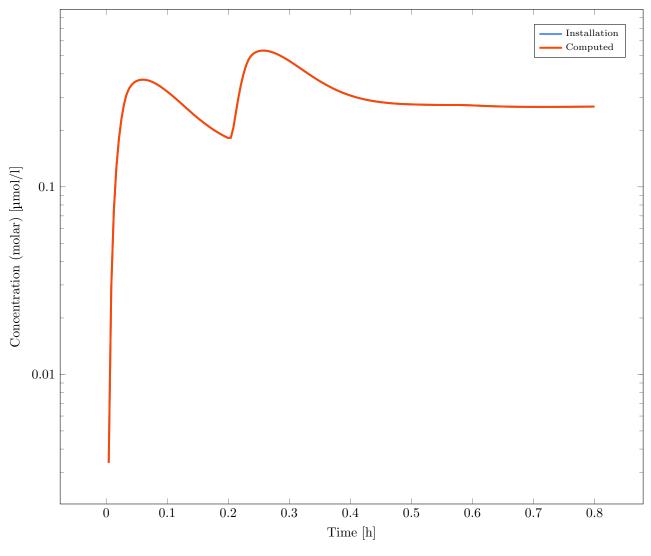
Simulation: Human\_pH\_SolubilityTable-S2\_Measurement

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood)

Deviation: 1.64E-6

## $Organism|Peripheral Venous Blood|C1|Plasma\ (Peripheral Venous\ Blood)$



**Figure 1.141** 

 $Simulation: \ Human\_pH\_SolubilityTable\_SolubilityChanged$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood)

Deviation: 1.99E-5

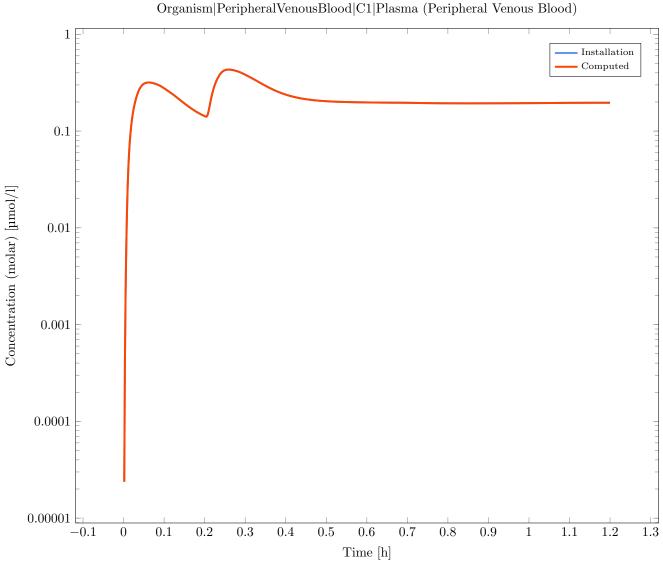


Figure 1.142

 ${\bf Simulation: \ \, Human\_pH\_SolubilityTable\_S4\_Table\_SolubilityTableChanged}$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C1|Plasma (Peripheral Venous Blood)

Deviation: 8.54E-8

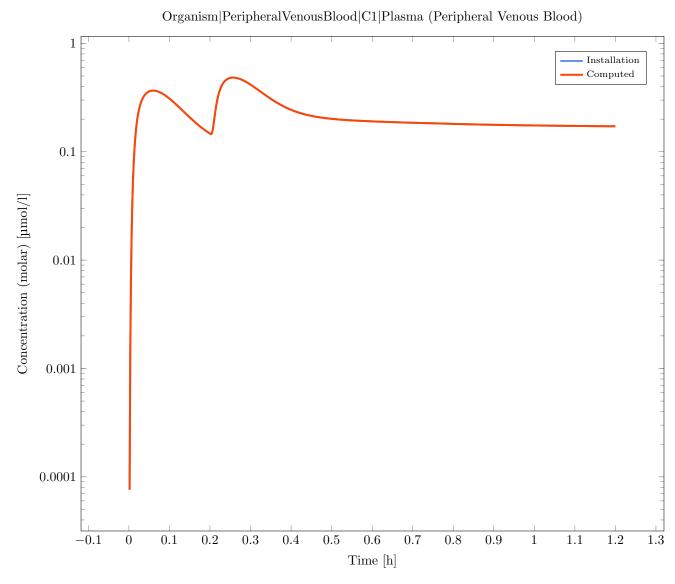


Figure 1.143

 ${\bf Simulation: \ Human\_Single IV\_Configuration-Human\_Single IV\_Configuration} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

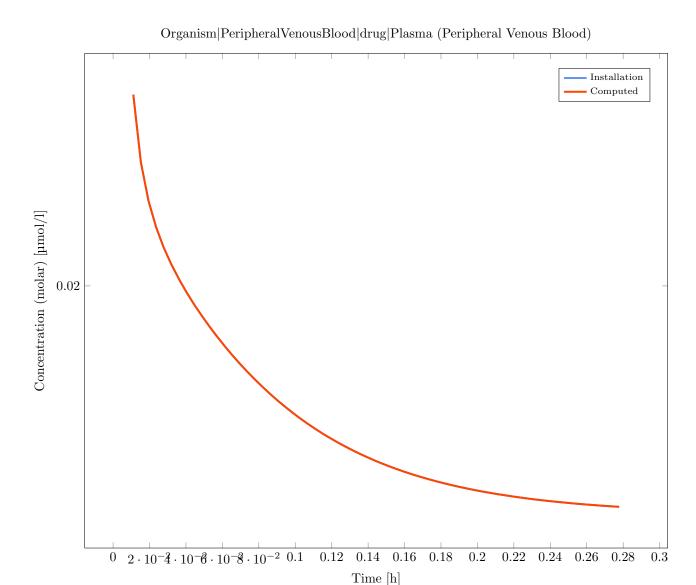


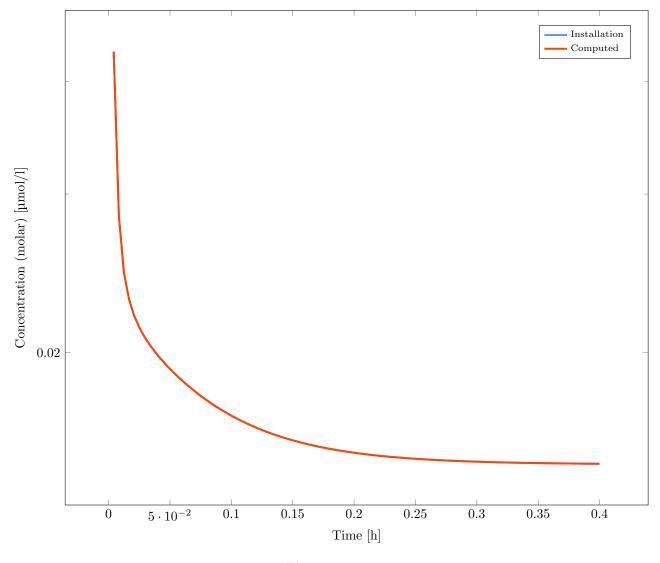
Figure 1.144

Simulation: Human\_SingleIV-Human\_SingleIV

Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 0

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

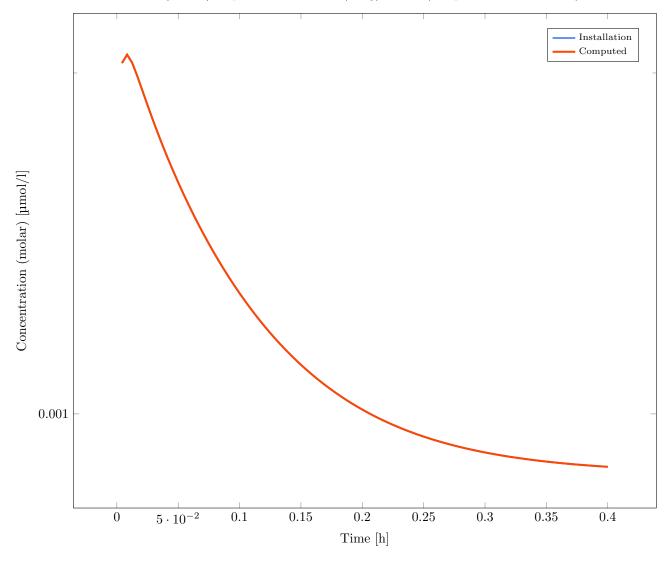


**Figure 1.145** 

Simulation: Human\_SingleIV-Human\_SingleIV\_MW\_200\_fu\_0.2\_LogP\_5 Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)



**Figure 1.146** 

 $Simulation: \ Human\_SingleIV-Human\_SingleIV\_MW\_800\_fu\_0.6\_LogP\_-5$ 

Result of the validation: Valid

 $Output\ Path:\ Organism | Peripheral Venous Blood | drug | Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 1.12E-7

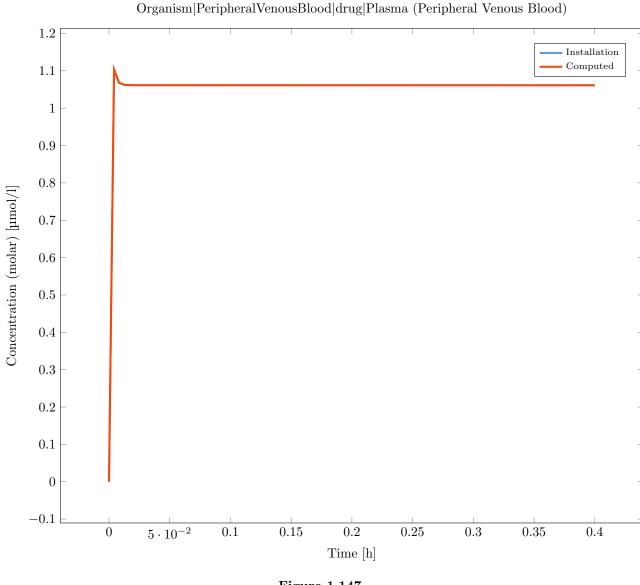
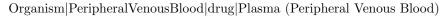
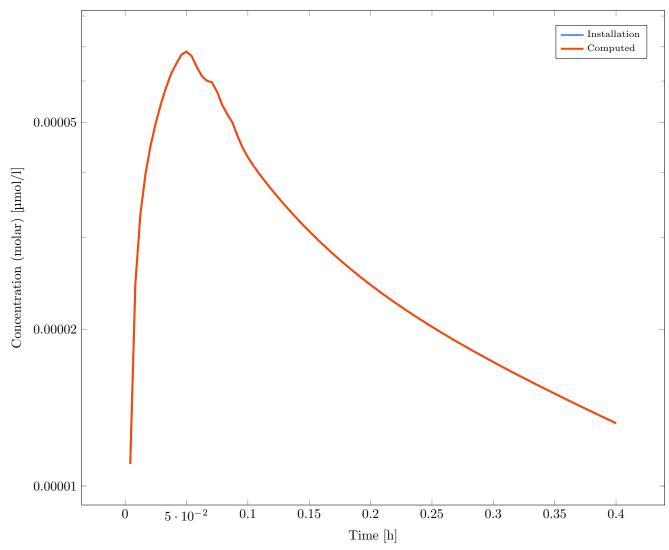


Figure 1.147

Simulation: Human\_SingleORAL\_Dissolved\_PlasmaClearance-Human\_SingleO

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 2.13E-7





**Figure 1.148** 

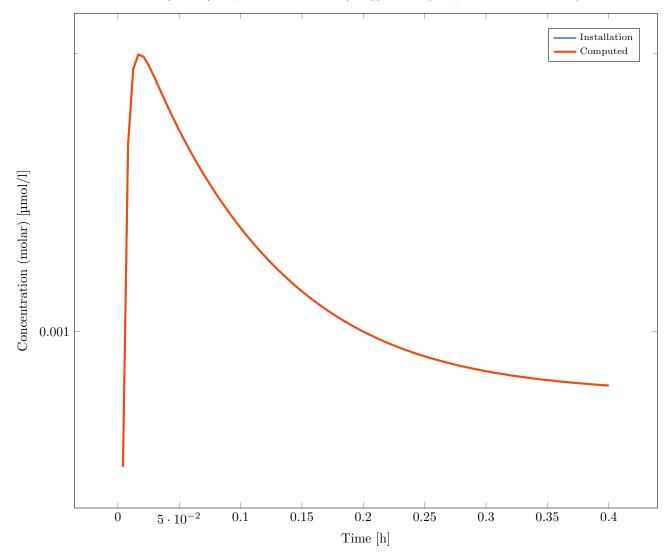
 $Simulation: Human\_SingleORAL\_Dissolved\_PlasmaClearance-Human\_Singl$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

Deviation: 0





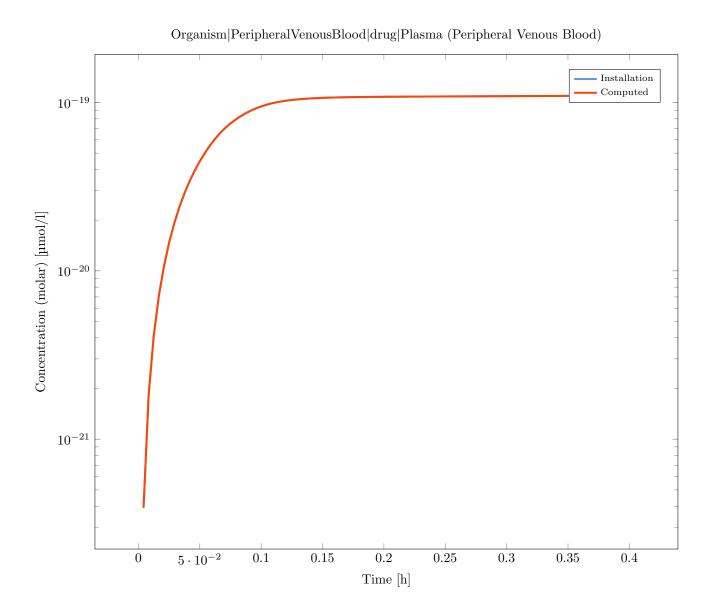
**Figure 1.149** 

 $Simulation: Human\_SingleORAL\_Dissolved\_PlasmaClearance-Human\_Singl$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

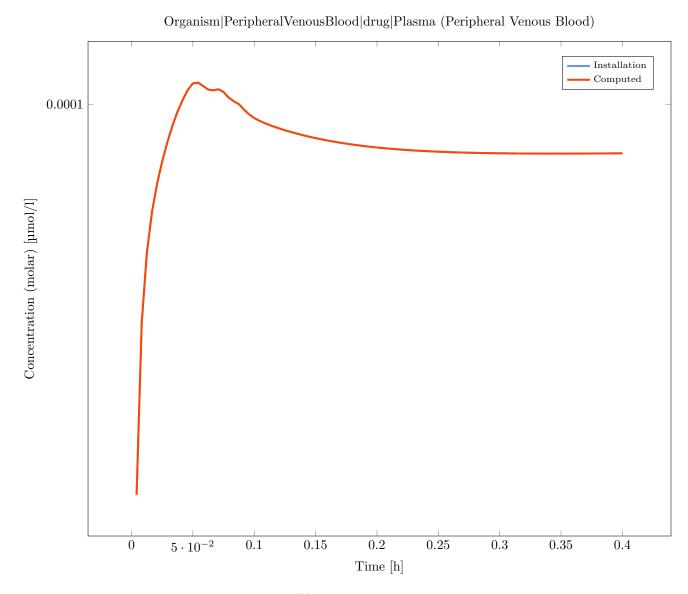
Deviation: 0



**Figure 1.150** 

Simulation: Human\_SingleORAL\_Dissolved-Human\_SingleORAL\_Dissolved Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $1.53 \pm .6$ 



**Figure 1.151** 

 $Simulation: Human\_SingleORAL\_Dissolved\_Human\_SingleORAL\_Dissolved\_MW\_200\_fu\_0.2\_LogP\_5$  Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

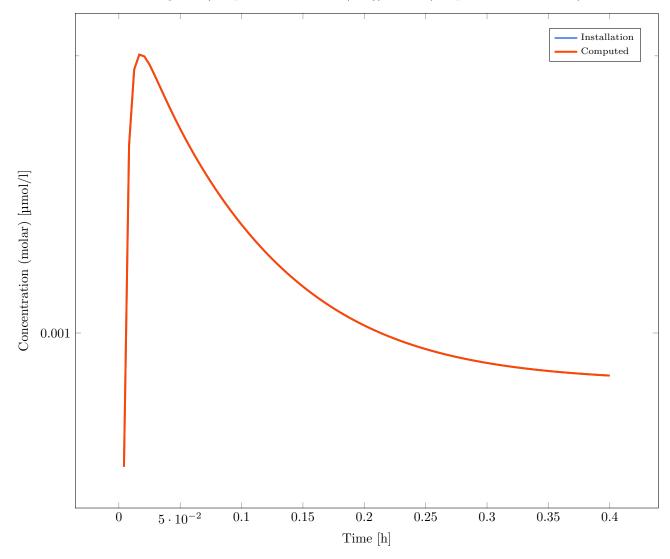
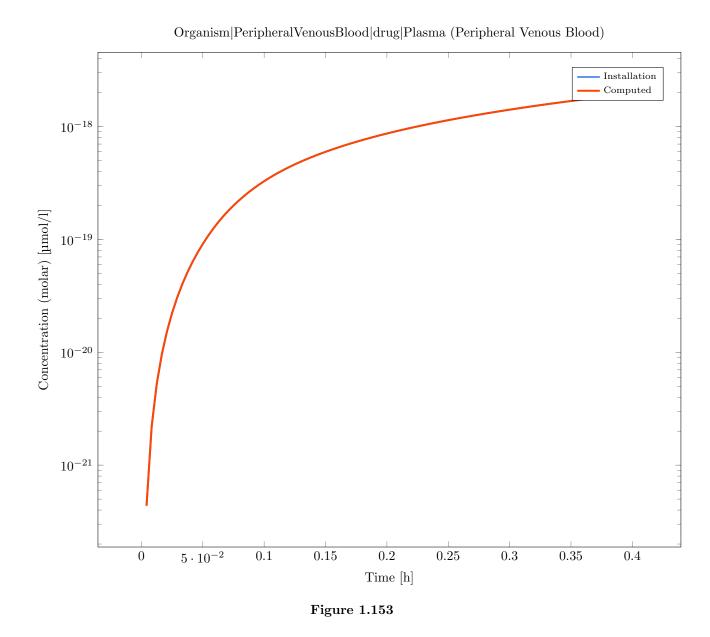


Figure 1.152

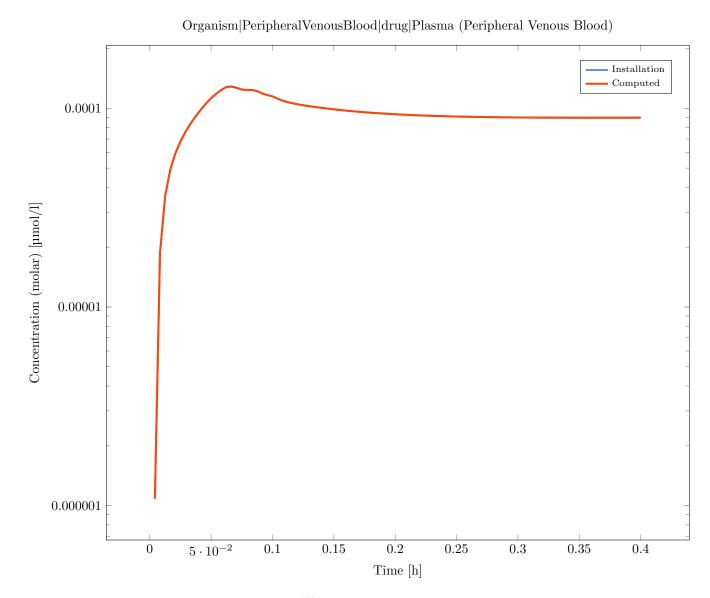
Simulation: Human\_SingleORAL\_Dissolved-Human\_SingleORAL\_Dissolved\_MW\_800\_fu\_0.6\_LogP\_--5 Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 



 ${\bf Simulation: \ Human\_SingleORAL\_Lint80\_AsSuspention-Human\_SingleORAL\_Lint80\_AsSuspention.} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0



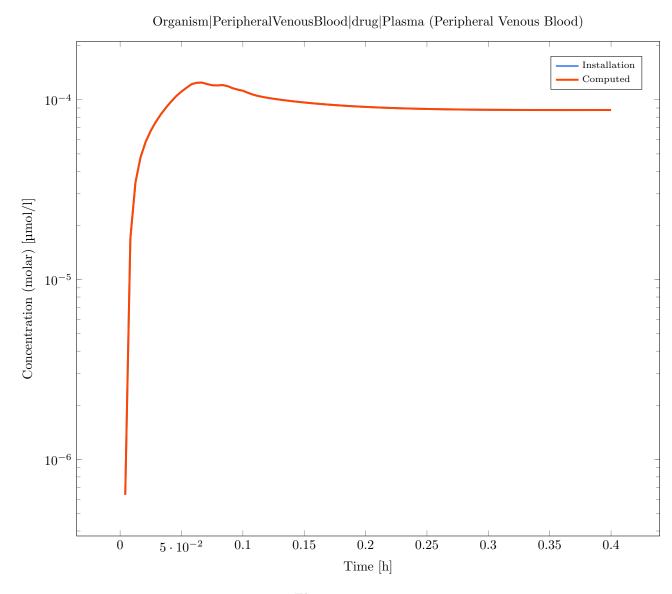
**Figure 1.154** 

 $Simulation: \ Human\_SingleORAL\_Lint80-Human\_SingleORAL\_Lint80$ 

Result of the validation: Valid

 $Output\ Path:\ Organism | Peripheral Venous Blood | drug | Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 2.89E-5

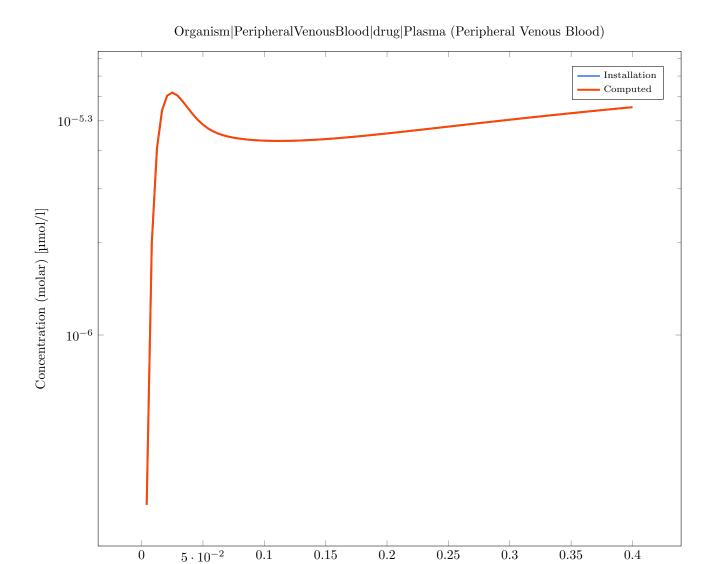


**Figure 1.155** 

 $Simulation: Human\_SingleORAL\_MonoParticles\_AsSuspention-Human\_SingleORAL\_MonoParticles\_AsSuspention\\$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 0



**Figure 1.156** 

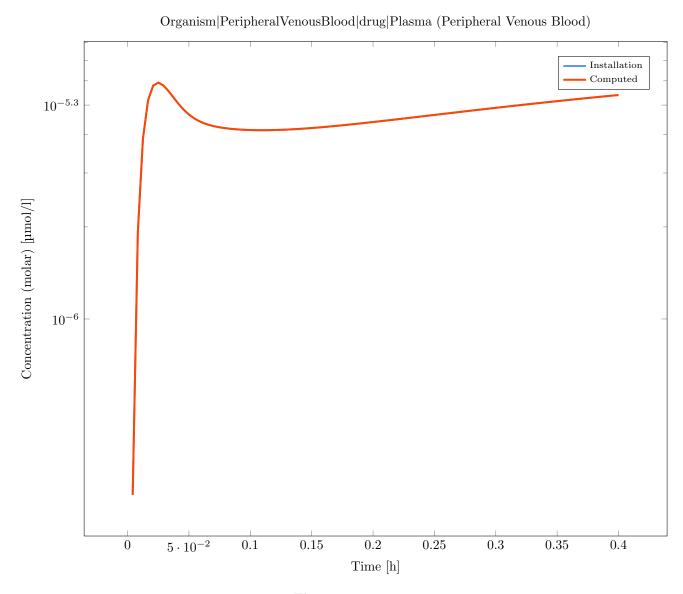
Time [h]

 $Simulation: \ Human\_SingleORAL\_PolyParticlesLogNormal\_AsSuspention-Human\_SingleORAL\_PolyParticlesLogNormal\_AsSuspention$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|drug|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 2.03E-6

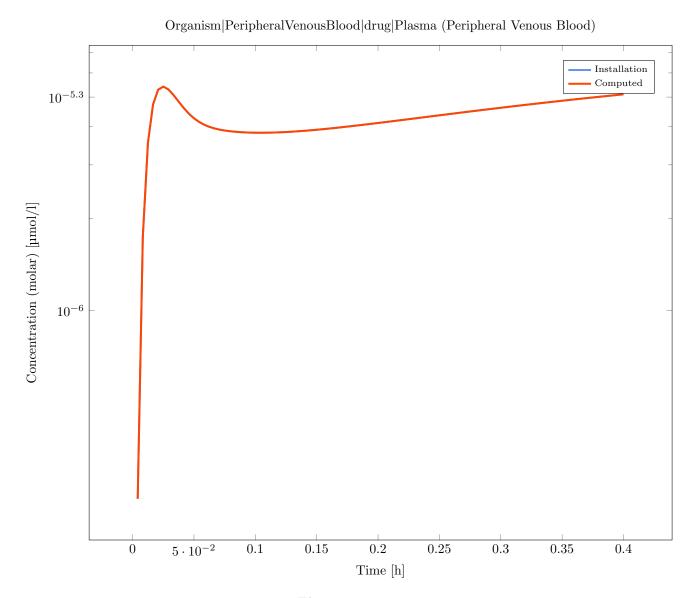


**Figure 1.157** 

 $Simulation: Human\_SingleORAL\_PolyParticlesNormal\_AsSuspention-Human\_SingleORAL\_PolyParticlesNormal\_AsSuspention\\$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 0



**Figure 1.158** 

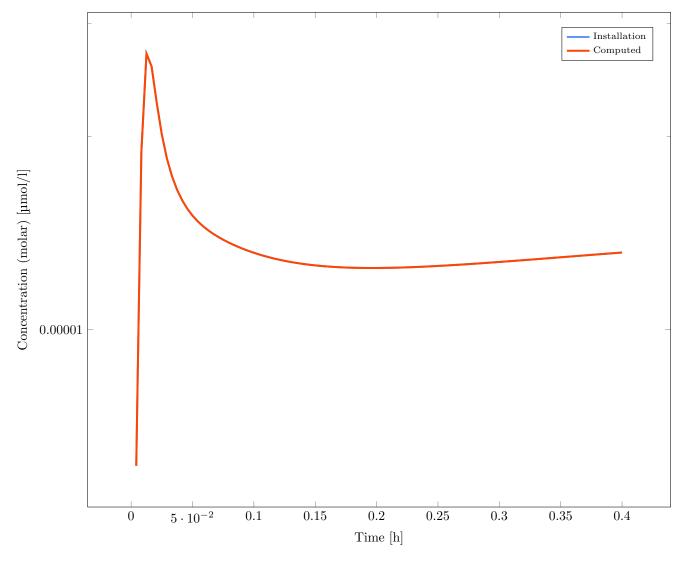
 $Simulation: Human\_SingleORAL\_PolyParticlesNormal\_AsSuspention-Human\_SingleORAL\_PolyParticlesNormal\_AsSuspention\_dissolved\_radius$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 0

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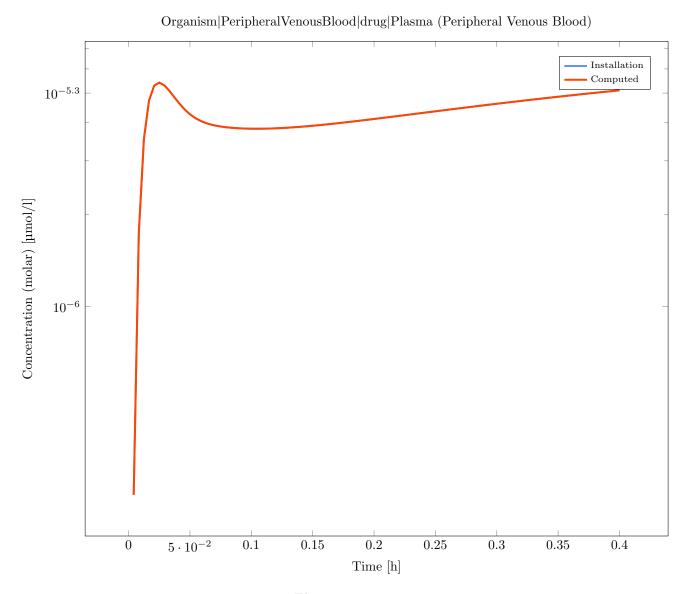
**Figure 1.159** 

 $Simulation: Human\_SingleORAL\_PolyParticlesNormal\_AsSuspention-Human\_SingleORAL\_PolyParticlesNormal\_AsSuspention\_treat\_precipated\_drug\_as\_soluble$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

Deviation: 0



**Figure 1.160** 

 ${\bf Simulation: Human\_SingleORAL\_Weibull\_AsSuspention-Human\_SingleORAL\_Weibull\_AsSuspention}. \\ {\bf Result\ of\ the\ validation:\ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $6.57\hbox{E-}6$ 

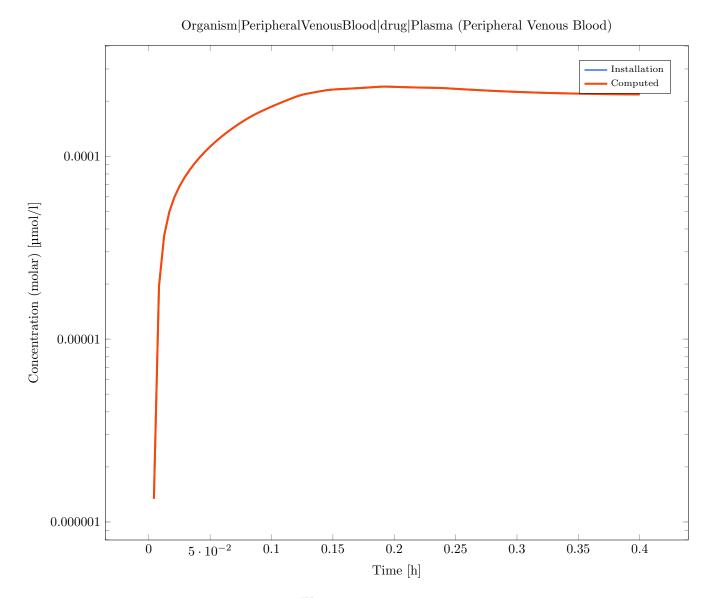


Figure 1.161

 $Simulation: Human\_SingleORAL\_Weibull\_AsSuspention-Human\_SingleORAL\_Weibull\_AsSuspention\_MW\_200\_fu\_0.2\_LogP\_5\\ Result of the validation: Valid$ 

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood) Deviation: 1.57E-6

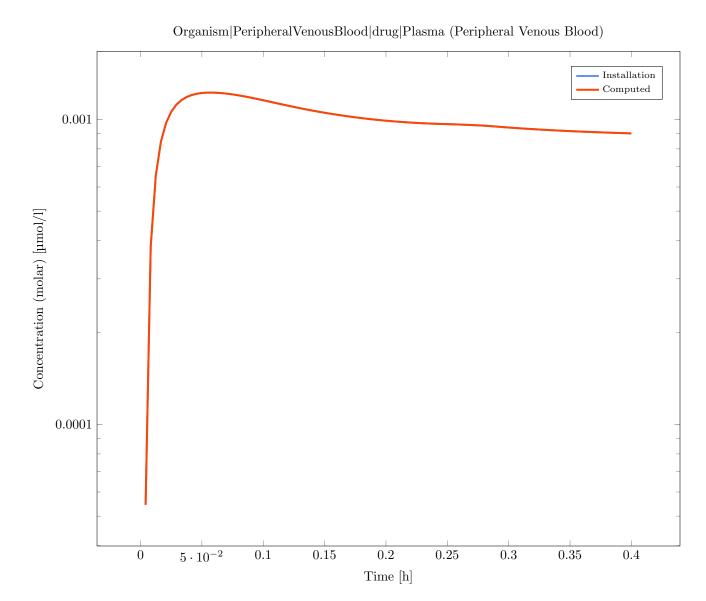
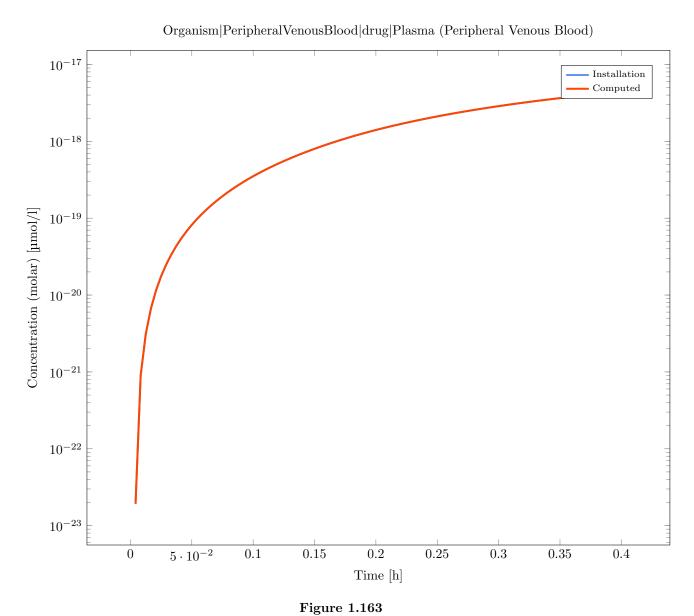


Figure 1.162

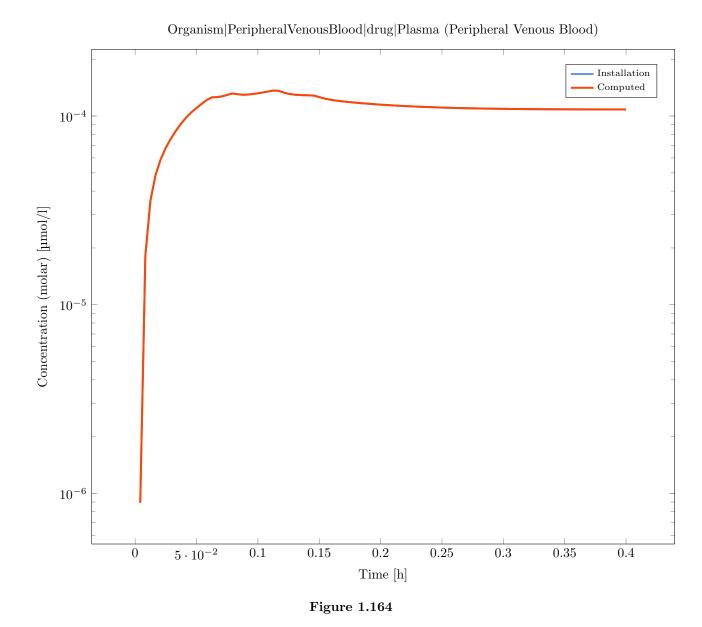
 $Simulation: Human\_SingleORAL\_Weibull\_AsSuspention-Human\_SingleORAL\_Weibull\_AsSuspention\_MW\_800\_fu\_0.6\_LogP\_-5\\ Result of the validation: Valid$ 

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation:  ${\bf 0}$ 



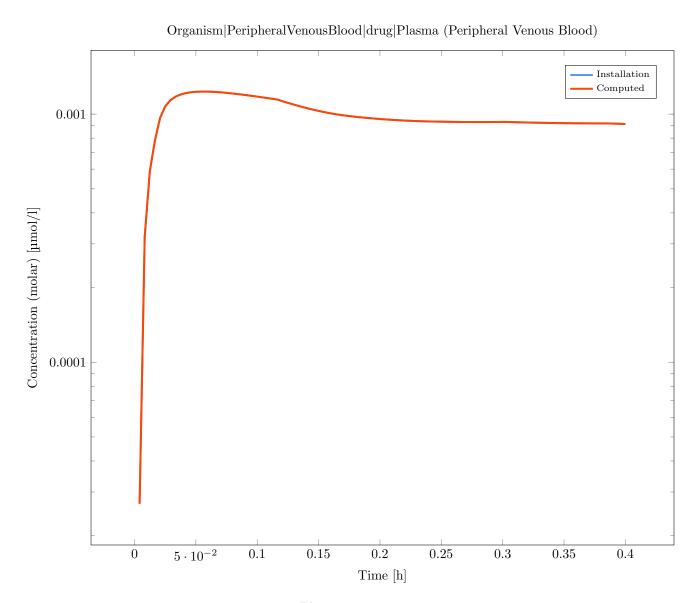
 ${\bf Simulation: \ Human\_SingleORAL\_Weibull-Human\_SingleORAL\_Weibull} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.08E-4



 $Simulation: \ Human\_SingleORAL\_Weibull\_Human\_SingleORAL\_Weibull\_MW\_200\_fu\_0.2\_LogP\_5 \\ Result of the validation: \ Valid$ 

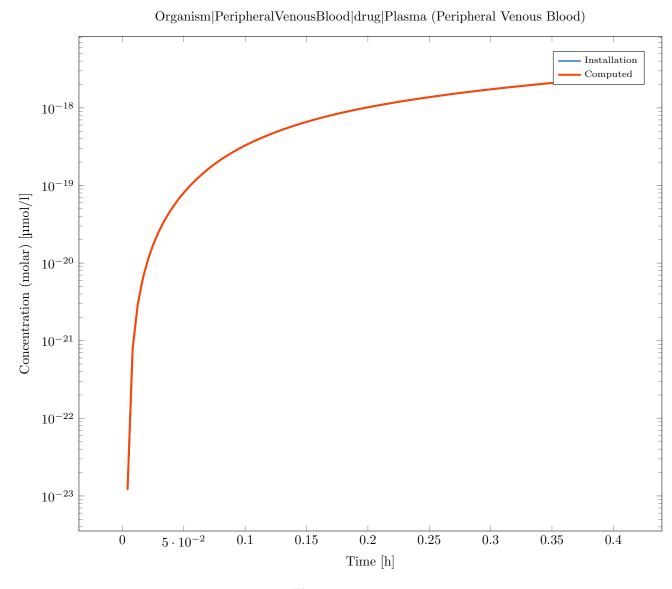
Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $4.05 \pm 6$ 



**Figure 1.165** 

Simulation: Human\_SingleORAL\_Weibull-Human\_SingleORAL\_Weibull\_MW\_800\_fu\_0.6\_LogP\_5 Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation:  ${\bf 0}$ 



**Figure 1.166** 

 ${\bf Simulation: Human\_Uncompetitive Inhibition-Human\_Uncompetitive Inhibition} \\ {\bf Result of the \ validation: \ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

# $\label{eq:constraint} Organism | Peripheral Venous Blood | drug | Plasma \; (Peripheral Venous Blood)$

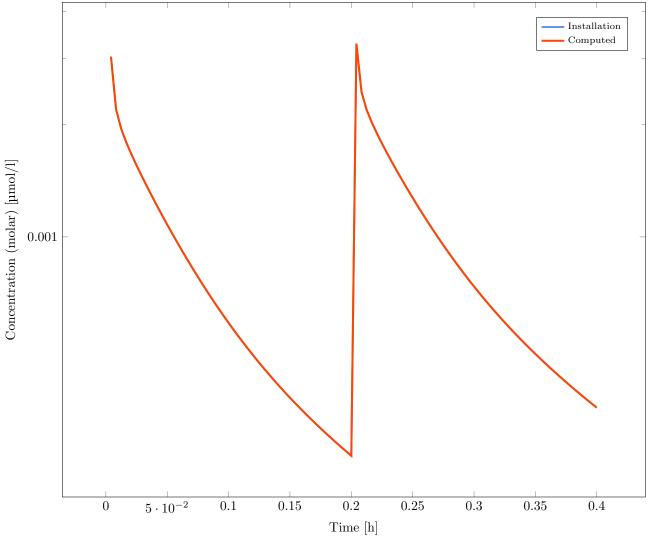
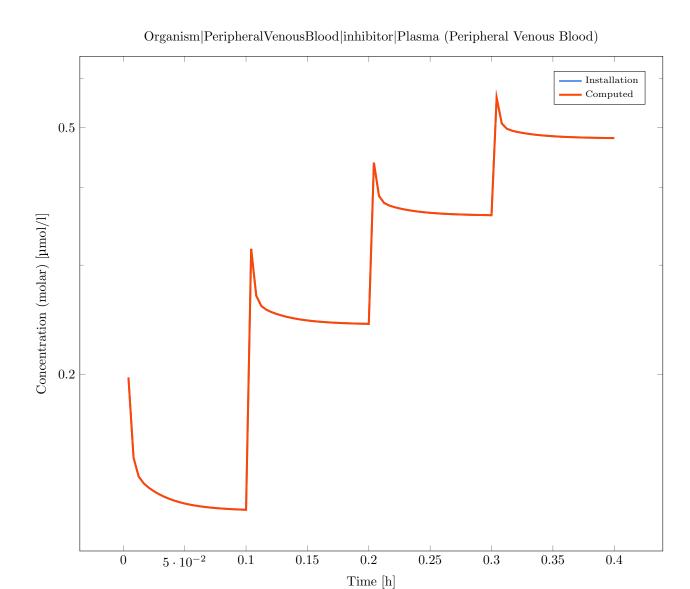


Figure 1.167

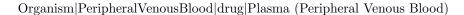
Output Path: Organism |PeripheralVenousBlood |<br/>inhibitor |Plasma (Peripheral Venous Blood) | Deviation:<br/> 0

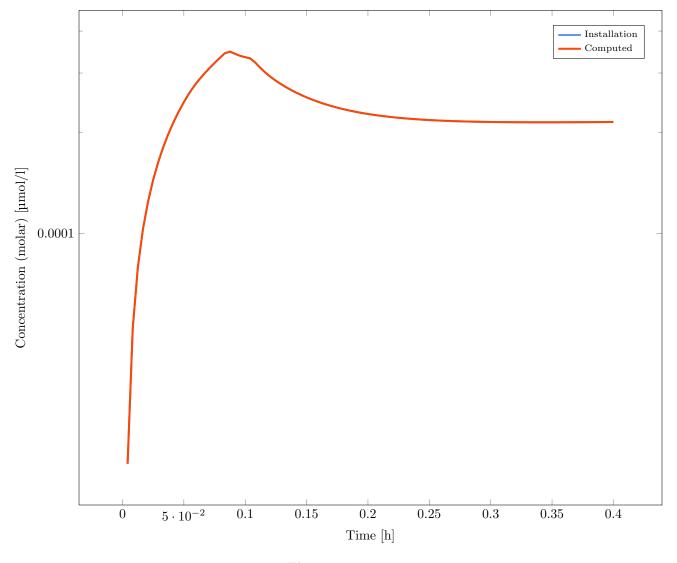


**Figure 1.168** 

Simulation: Minipig\_SingleORAL\_Dissolved-Minipig\_SingleORAL\_Dissolved Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0





**Figure 1.169** 

 $Simulation: \ Minipig\_SingleORAL\_Dissolved\_Minipig\_SingleORAL\_Dissolved\_MW\_200\_fu\_0.2\_LogP\_5$  Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)

Deviation: 0



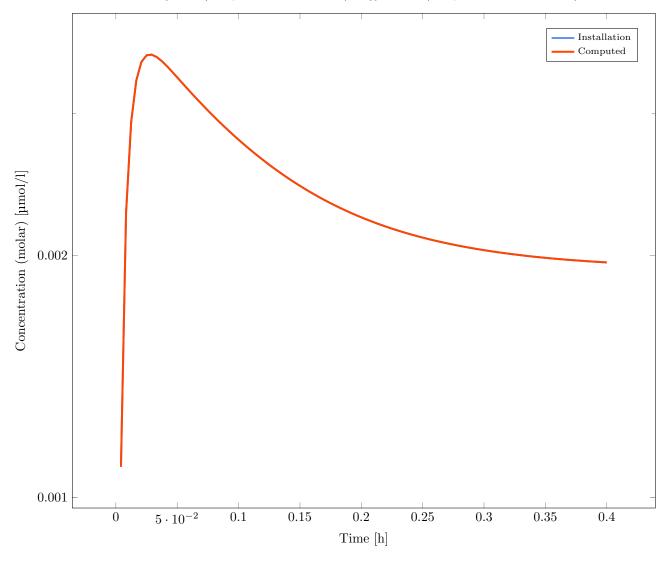


Figure 1.170

 $\label{lem:simulation:minipig_SingleORAL_Dissolved_MW_800_fu_0.6_LogP_-5 \\ Result of the validation: Valid$ 

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation:  ${\bf 0}$ 



Figure 1.171

 ${\bf Simulation: \ Monkey\_SingleORAL\_Dissolved-Monkey\_SingleORAL\_Dissolved \ Result \ of \ the \ validation: \ Valid}$ 

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

# Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood) Installation Computed 0.001

Figure 1.172

0.2

Time [h]

0.25

0.35

0.3

0.4

0.15

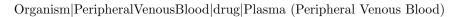
0.1

Simulation: Monkey\_SingleORAL\_Dissolved-Monkey\_SingleORAL\_Dissolved\_MW\_200\_fu\_0.2\_LogP\_5 Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation: 0

0

 $5 \cdot 10^{-2}$ 



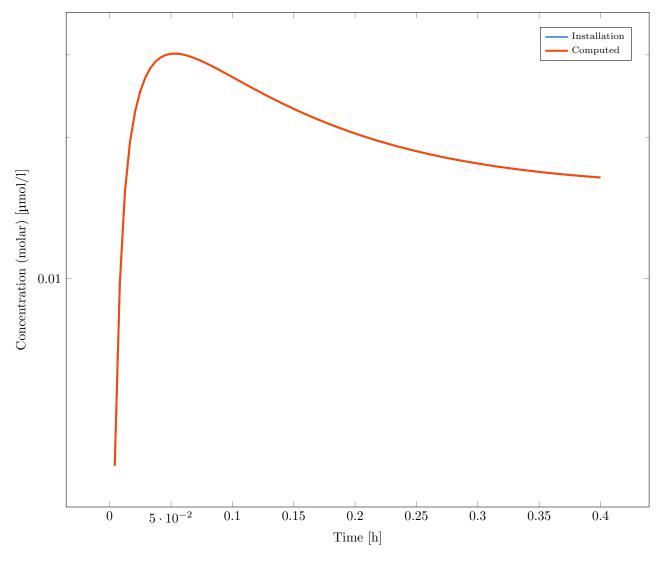
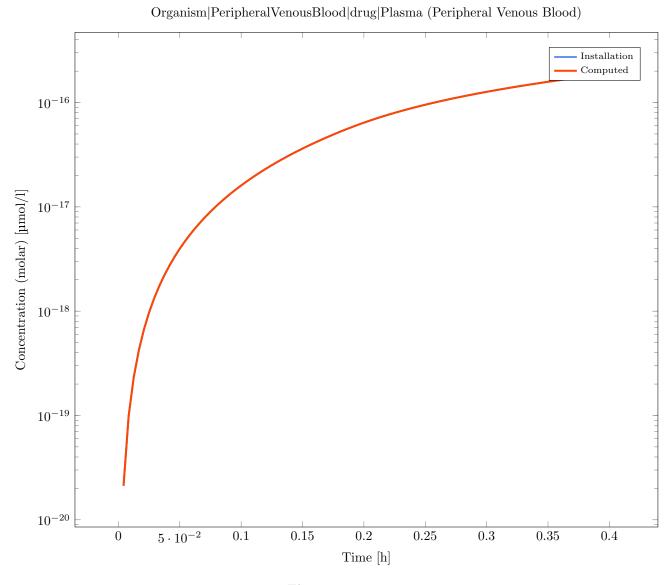


Figure 1.173

Simulation: Monkey\_SingleORAL\_Dissolved-Monkey\_SingleORAL\_Dissolved\_MW\_800\_fu\_0.6\_LogP\_--5 Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation:  ${\bf 0}$ 

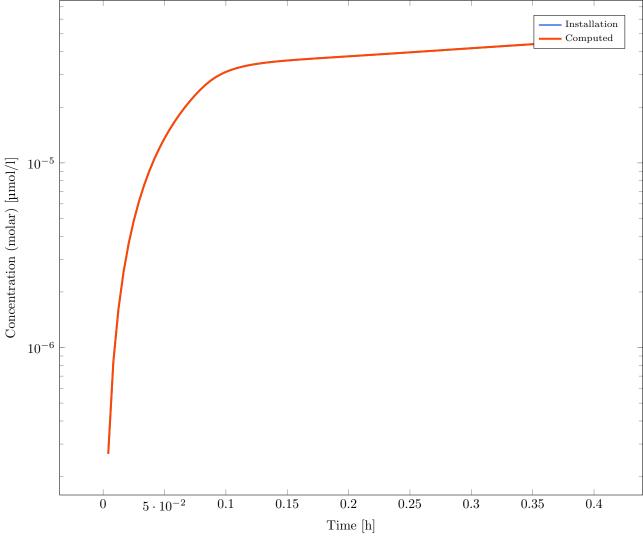


**Figure 1.174** 

Simulation: Mouse\_SingleORAL\_Dissolved-Mouse\_SingleORAL\_Dissolved Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

# Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)



**Figure 1.175** 

 $Simulation: Mouse\_SingleORAL\_Dissolved\_MW\_200\_fu\_0.2\_LogP\_5$ 

Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $\mathbf 0$ 

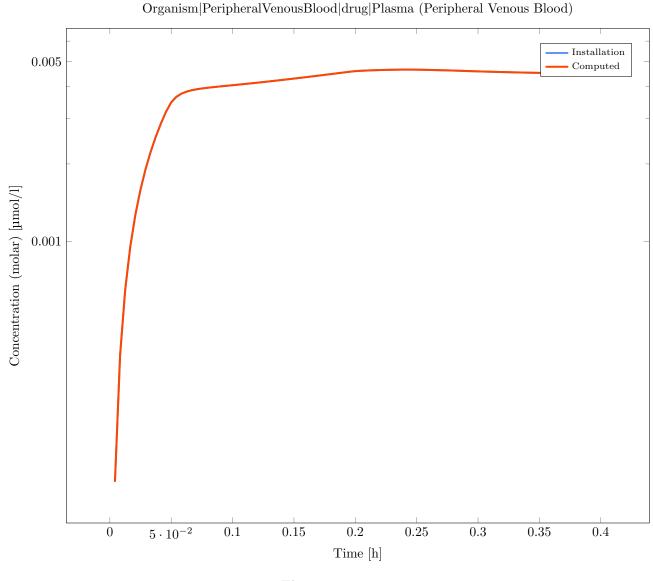


Figure 1.176

Simulation: Mouse\_SingleORAL\_Dissolved-Mouse\_SingleORAL\_Dissolved\_MW\_800\_fu\_0.6\_LogP\_--5 Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  $\mathbf 0$ 

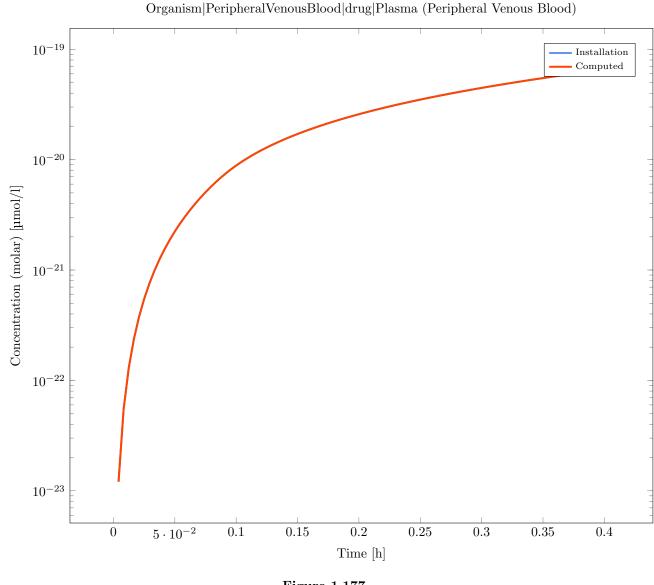
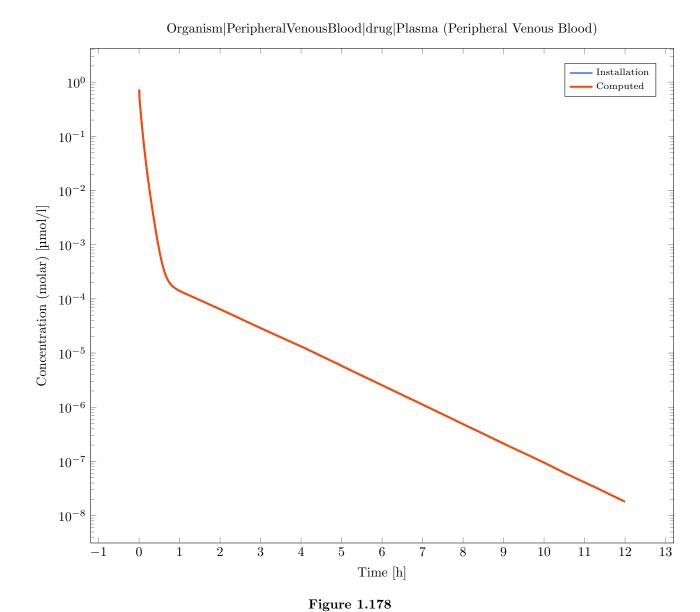


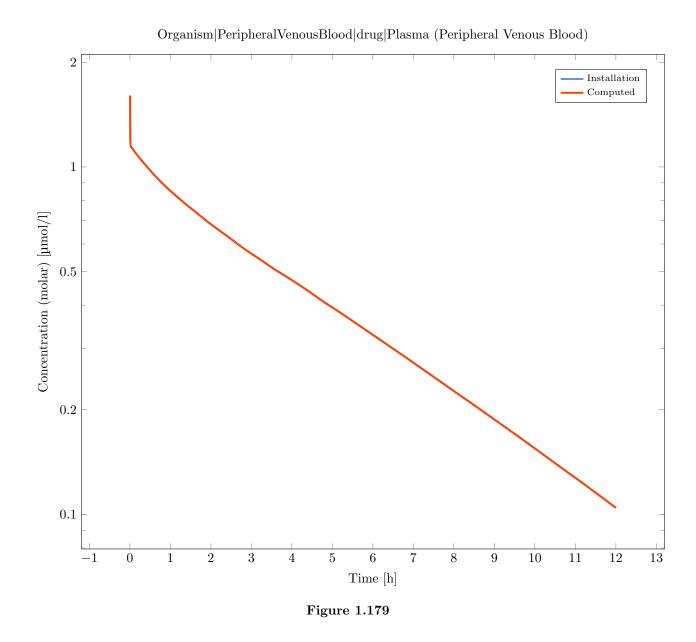
Figure 1.177

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.74E-4

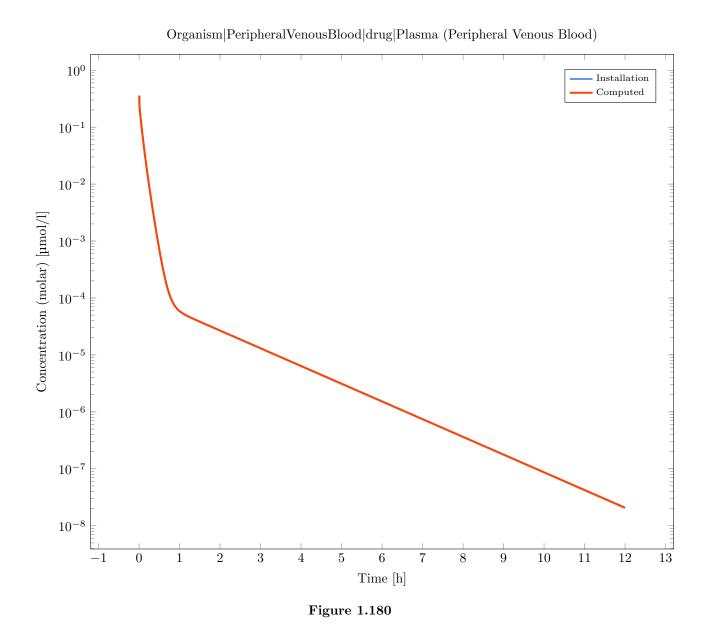


 $Simulation: \ \, Preterm\_SingleIV\_Age\_0\_GA\_32\_GFR-Preterm\_SingleIV\_Age\_0\_GA\_32\_GFR \\ Result of the validation: \ \, Valid$ 

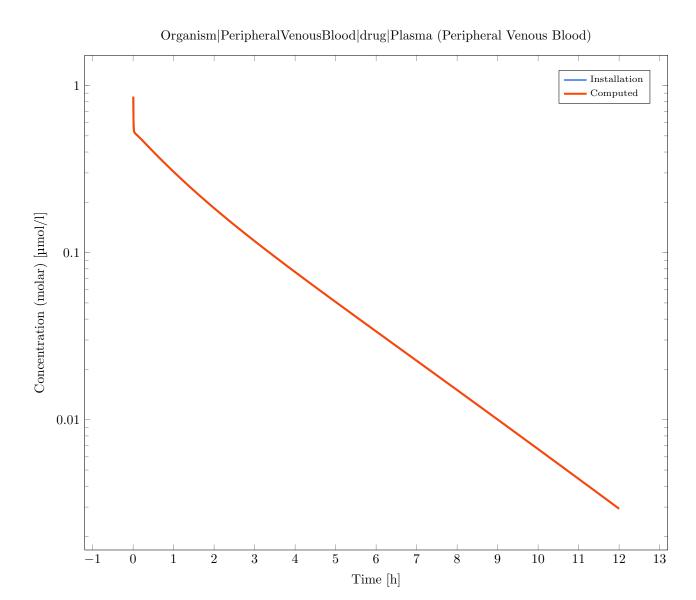
Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation: 1.42E-4



 $\label{lem:condition:con$ 



 $Simulation: \ \, Preterm\_SingleIV\_Age\_15\_GA\_32\_GFR-Preterm\_SingleIV\_Age\_15\_GA\_32\_GFR \\ Result of the validation: \ \, Valid$ 



**Figure 1.181** 

 ${\bf Simulation: Rabbit\_SingleORAL\_Dissolved-Rabbit\_SingleORAL\_Dissolved} \\ {\bf Result \ of \ the \ validation: \ Valid}$ 

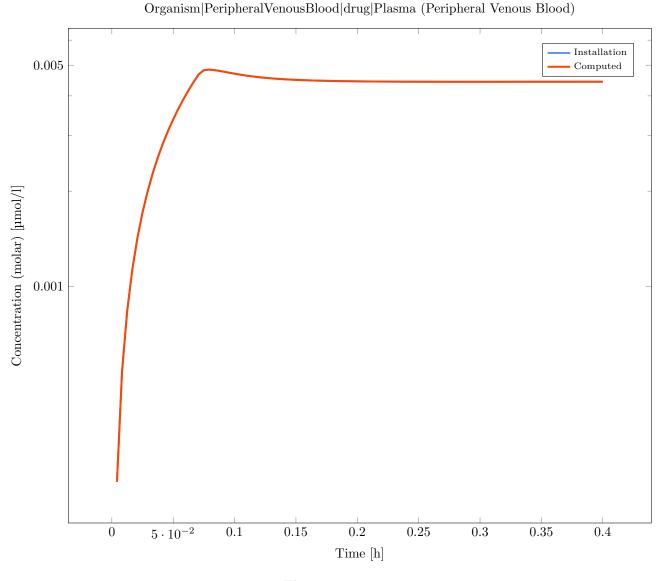
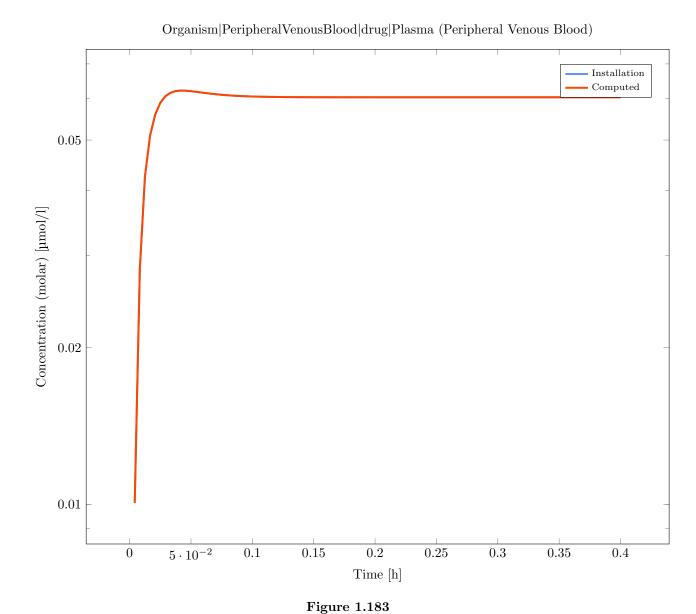


Figure 1.182

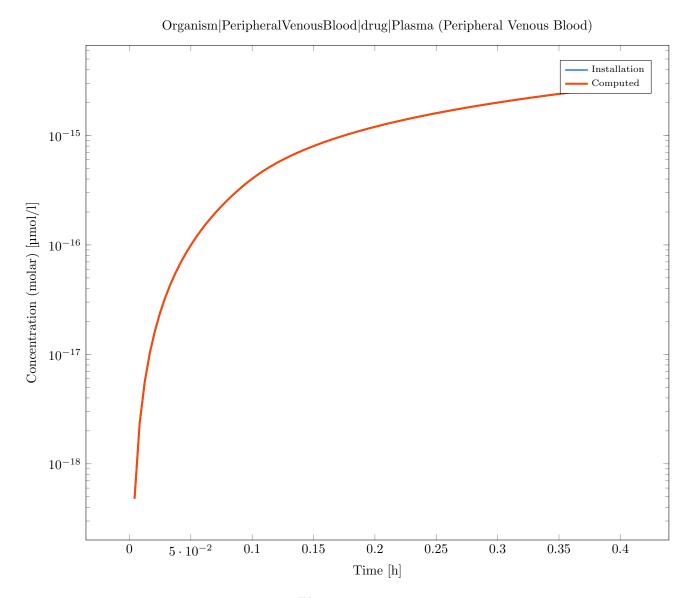
 $Simulation: Rabbit\_SingleORAL\_Dissolved\_Rabbit\_SingleORAL\_Dissolved\_MW\_200\_fu\_0.2\_LogP\_5$  Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation:  ${\bf 0}$ 



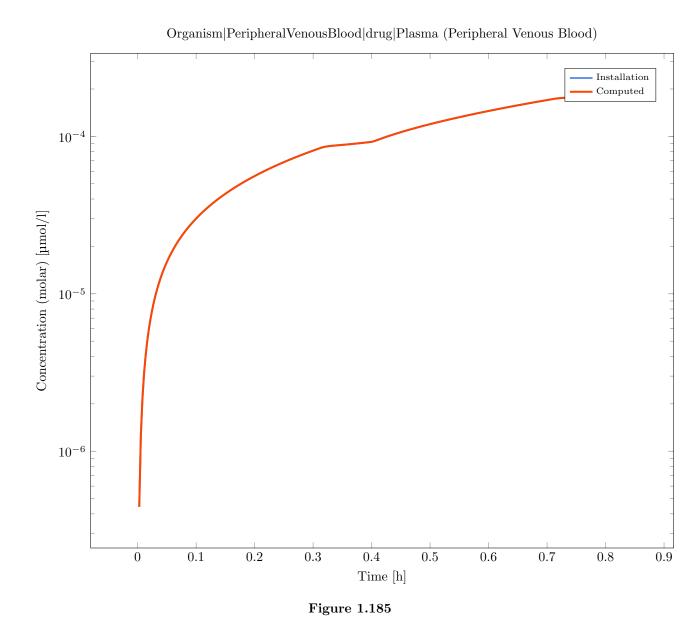
 $\label{local_simpleORAL_Dissolved_Rabbit_SingleORAL_Dissolved_MW_800_fu_0.6_LogP_--5 \\ Result of the validation: Valid$ 

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 



**Figure 1.184** 

Simulation: Rat\_MultiORAL\_6\_6\_12\_Dissolved-Rat\_MultiORAL\_6\_6\_12\_Dissolved Result of the validation: Valid



 $Simulation: Rat\_MultiORAL\_6\_6\_6\_6\_Dissolved-Rat\_MultiORAL\_6\_6\_6\_6\_Dissolved \\ Result of the validation: Valid$ 

Output Path: Organism |PeripheralVenousBlood |<br/>drug |Plasma (Peripheral Venous Blood) Deviation:  ${\bf 0}$ 

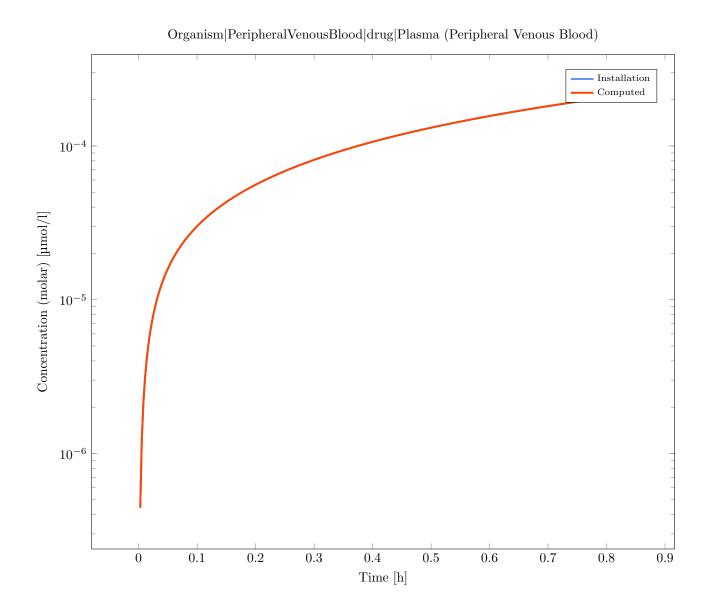


Figure 1.186

Output Path: Organism |PeripheralVenousBlood |drug |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood) Installation Computed $10^{-4}$ Concentration (molar) $[\mu]$ $10^{-5}$ $10^{-6}$ 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

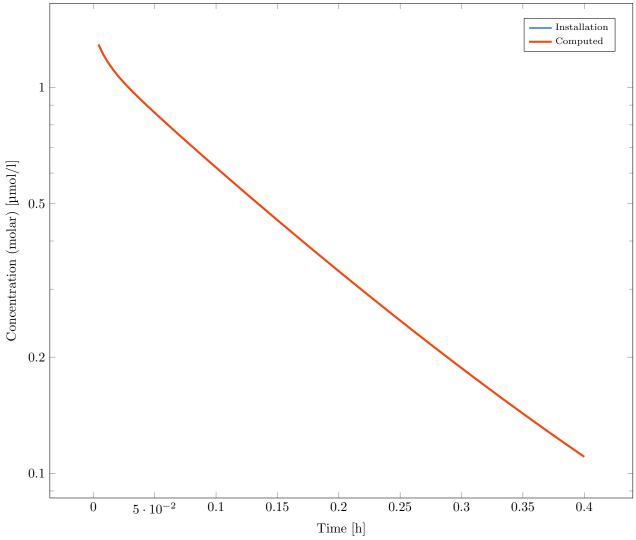
Figure 1.187

Time [h]

 $Simulation: Single IV\_2 Pores\_Human-Single IV\_2 Pores\_Human$ 

Result of the validation: Valid

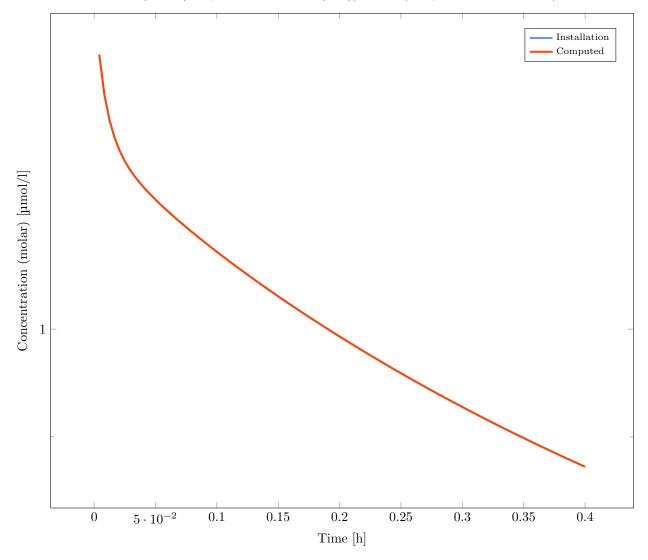
### $\label{eq:constraint} Organism | Peripheral Venous Blood | drug | Plasma \; (Peripheral Venous Blood)$



**Figure 1.188** 

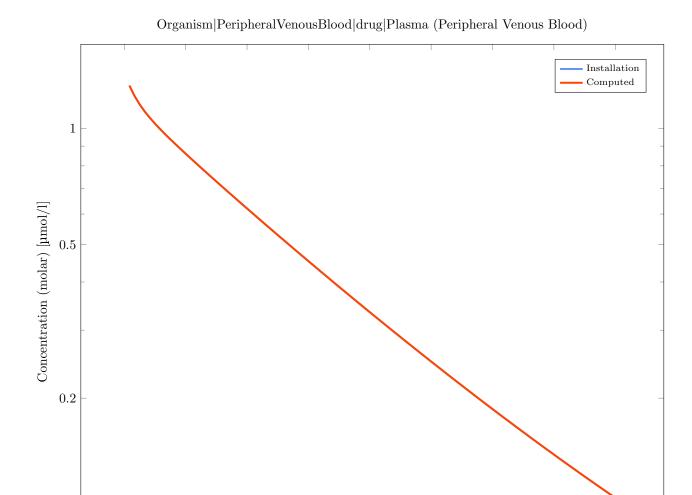
Simulation: SingleIV\_2Pores\_Human-SingleIV\_2Pores\_Human\_SimulationC Result of the validation: Valid

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)



**Figure 1.189** 

Simulation: SingleIV\_2Pores\_Human-SingleIV\_2Pores\_Human\_SimulationD Result of the validation: Valid



**Figure 1.190** 

0.2

Time [h]

0.25

0.3

0.35

0.4

0.15

Simulation: SingleIV\_2Pores\_Human-SingleIV\_2Pores\_Human\_SimulationF Result of the validation: Valid

0.1

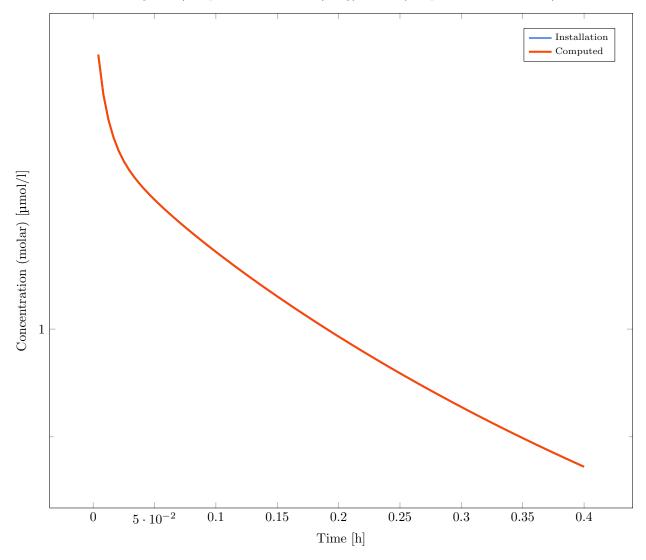
Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

0.1

0

 $5\cdot 10^{-2}$ 

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)



**Figure 1.191** 

 $Simulation: Single IV\_2 Pores\_Monkey-Single IV\_2 Pores\_Monkey$ 

Result of the validation: Valid

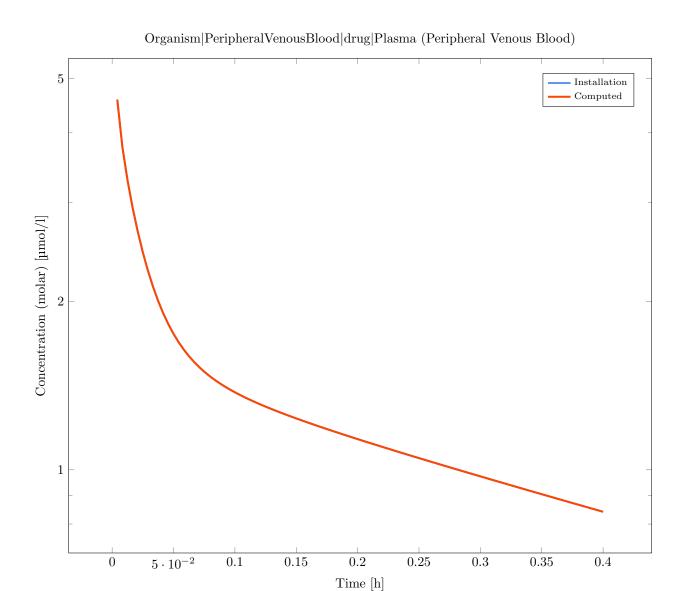
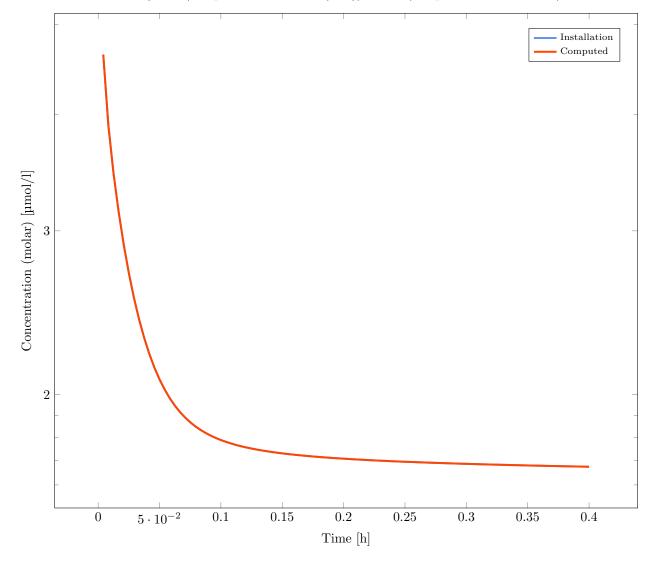


Figure 1.192

Simulation: SingleIV\_2Pores\_Monkey-SingleIV\_2Pores\_Monkey\_SimulationG Result of the validation: Valid

### Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood)



**Figure 1.193** 

Simulation: SingleIV\_2Pores\_Monkey-SingleIV\_2Pores\_Monkey\_SimulationH Result of the validation: Valid

## Organism|PeripheralVenousBlood|drug|Plasma (Peripheral Venous Blood) | Total | Computed | Computed

**Figure 1.194** 

0.2

Time [h]

0.25

0.3

0.35

0.4

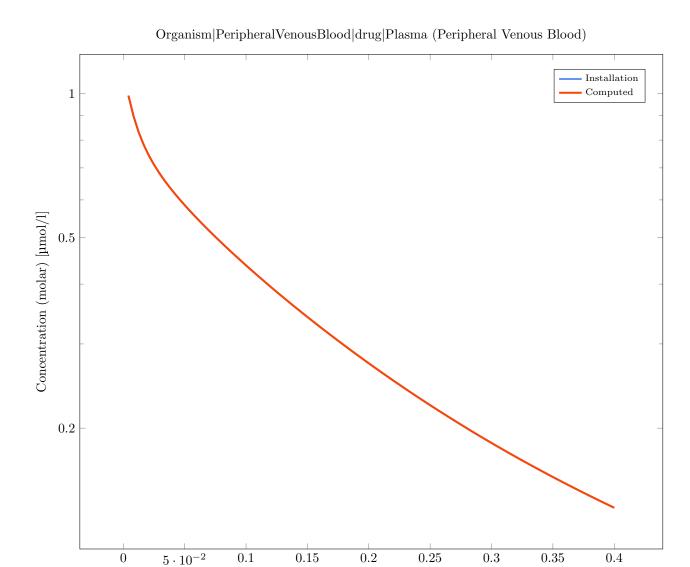
0.15

 ${\bf Simulation: \ Single IV\_2 Pores\_Mouse-Single IV\_2 Pores\_Mouse}$ 

0.1

 $5\cdot 10^{-2}$ 

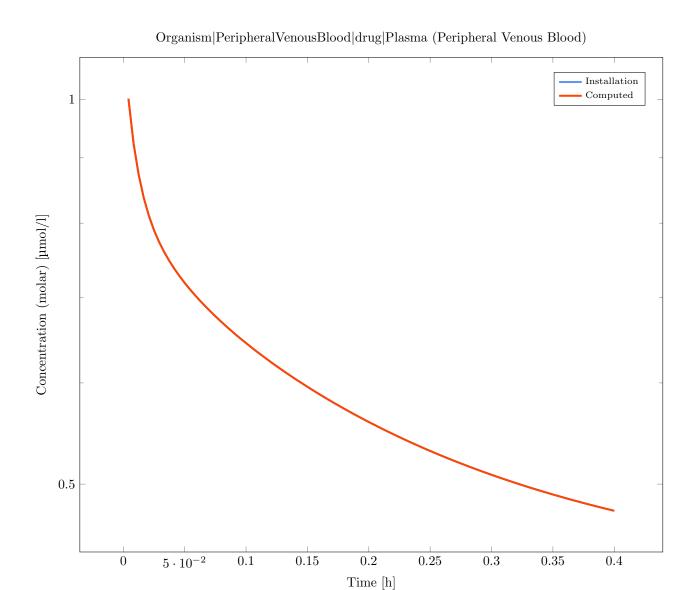
Result of the validation: Valid



**Figure 1.195** 

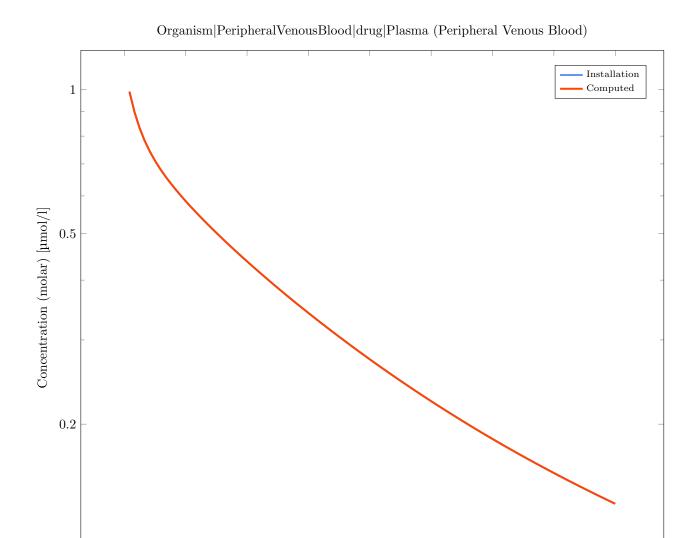
Time [h]

Simulation: SingleIV\_2Pores\_Mouse-SingleIV\_2Pores\_Mouse\_SimulationA Result of the validation: Valid



**Figure 1.196** 

Simulation: SingleIV\_2Pores\_Mouse-SingleIV\_2Pores\_Mouse\_SimulationB Result of the validation: Valid



**Figure 1.197** 

0.2

Time [h]

0.25

0.3

0.35

0.4

0.15

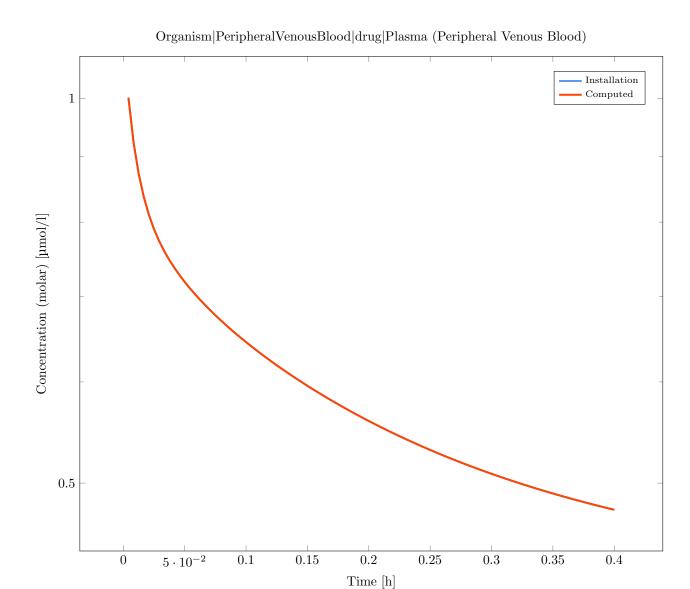
Simulation: SingleIV\_2Pores\_Mouse-SingleIV\_2Pores\_Mouse\_SimulationE Result of the validation: Valid

0.1

Output Path: Organism |Peripheral Venous<br/>Blood |drug |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

0

 $5\cdot 10^{-2}$ 



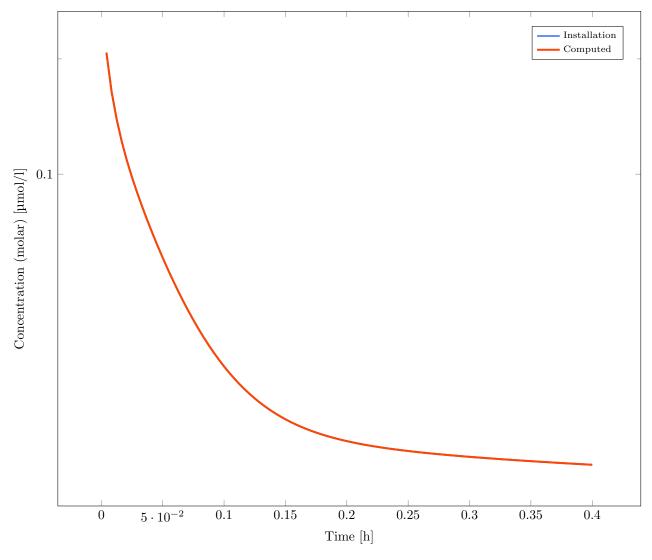
**Figure 1.198** 

 $Simulation: Single IV\_C1\_4 Comp\_standard\_stand$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |C1|Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

### ${\it Organism}|{\it Peripheral Venous Blood}|{\it C1}|{\it Plasma}~({\it Peripheral Venous Blood})$



**Figure 1.199** 

 $Simulation: Single IV\_C2\_4 Comp\_PT\_standard\_st$ 

## Organism|PeripheralVenousBlood|C2|Plasma (Peripheral Venous Blood) Installation Computed 0.2

Figure 1.200

 $Simulation: Single IV\_C2\_4 Comp\_RR\_standard\_st$ 

0.2

Time [h]

0.25

0.35

0.4

0.3

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

0.15

0.1

0

 $5\cdot 10^{-2}$ 

### Organism|PeripheralVenousBlood|C2|Plasma (Peripheral Venous Blood) 1.4 1.2 1.2 0.8 0.4 0.2

Figure 1.201

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: Single IV\_C2\_4 Comp\_standard\_schmitt\_standard-Single IV\_C2\_4 Comp\_standard\_schmitt\_standard\\$ 

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

0

Output Path: Organism |PeripheralVenousBlood |C2 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

0.15

# Organism|PeripheralVenousBlood|C2|Plasma (Peripheral Venous Blood) Installation Computed 0.5

Figure 1.202

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: Single IV\_C3\_4 Comp\_RR\_schmitt\_standard-Single IV\_C3\_schmitt\_standard-Single IV\_C3\_schmitt\_schmitt\_standard-Single IV\_C3\_schmitt\_s$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C3 |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

0.15

0.1

0

 $5\cdot 10^{-2}$ 

### Organism|PeripheralVenousBlood|C3|Plasma (Peripheral Venous Blood)

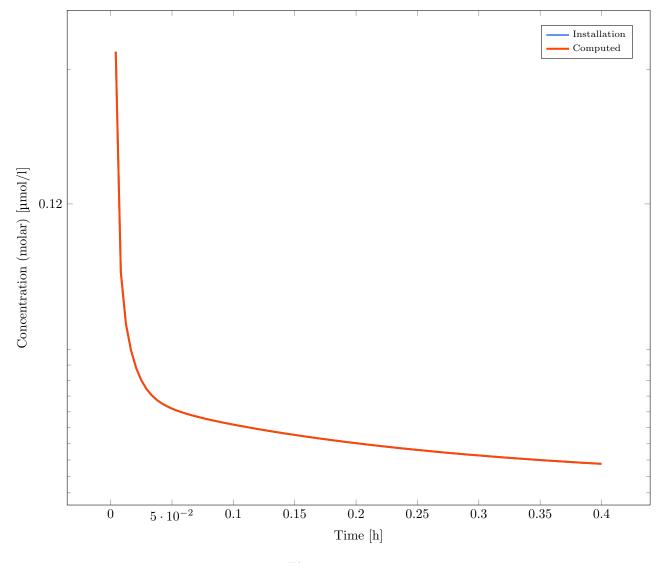


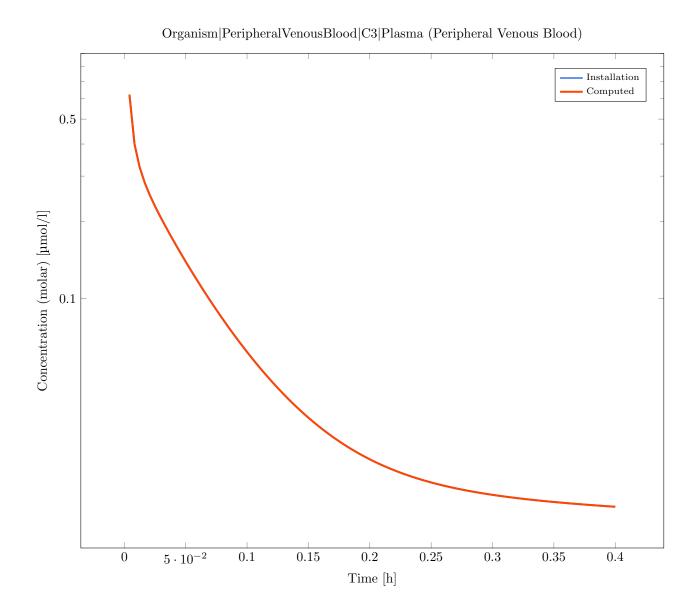
Figure 1.203

 $Simulation: Single IV\_C3\_4 Comp\_standard\_schmittnorm lized\_standard-Single IV\_C3\_4 Comp\_standard\_schmittnorm lized\_standard$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C3|Plasma (Peripheral Venous Blood)

Deviation: 0



**Figure 1.204** 

 $Simulation: Single IV\_C4\_2 Pores\_RR\_standard\_s$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C4 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

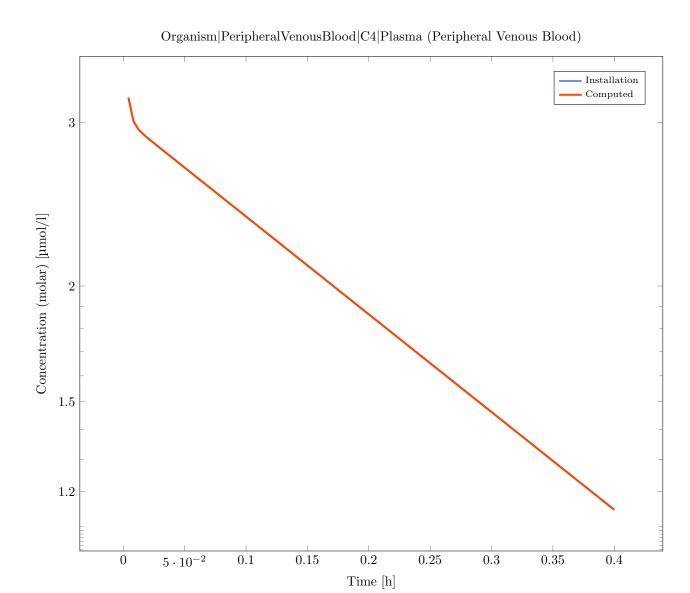


Figure 1.205

 $Simulation: Single IV\_C4\_4 Comp\_Ber\_standard\_s$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C4 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

### $Organism|Peripheral Venous Blood|C4|Plasma\ (Peripheral Venous\ Blood)$

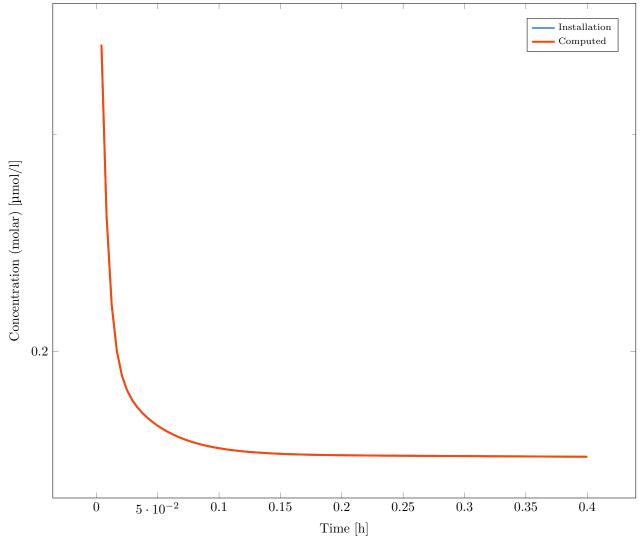


Figure 1.206

 $Simulation: Single IV\_C5\_2 Pores\_Ber\_standard\_$ 

### Organism|PeripheralVenousBlood|C5|Plasma (Peripheral Venous Blood) Installation Computed 3 Concentration (molar) $[\mu mol/1]$ 2 1.5 1.2 0.15 0.2 0.25 0.3 0.35 0 $5\cdot 10^{-2}$ 0.1 0.4

Figure 1.207

Time [h]

 $Simulation: Single IV\_C5\_2 Pores\_PT\_standard\_s$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C5 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

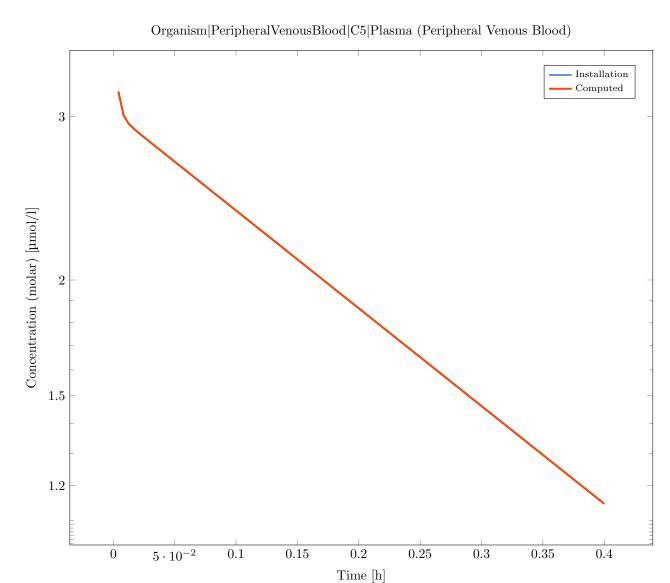


Figure 1.208

 $Simulation: SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_C5\_2Pores\_RR\_schmitt\_standard-SingleIV\_schmitt\_schmi$ 

Output Path: Organism |Peripheral Venous<br/>Blood |C5 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

### Installation Computed Computed 1.5

Organism|PeripheralVenousBlood|C5|Plasma (Peripheral Venous Blood)

.

0.2

Time [h]

0.25

0.3

0.35

0.4

0.15

0.1

Figure 1.209

 $Simulation: Single IV\_C6\_2 Pores\_standard\_stan$ 

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

 $Output\ Path:\ Organism|PeripheralVenousBlood|C6|Plasma\ (Peripheral\ Venous\ Blood)$ 

Deviation: 0

## Organism|PeripheralVenousBlood|C6|Plasma (Peripheral Venous Blood) Installation Computed 1.5

Figure 1.210

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: Single IV\_C7\_2 Pores\_standard\_schmitt\_standard\_Single IV\_C7\_2 Pores\_standard\_schmitt\_schmitt$ 

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

Output Path: Organism |PeripheralVenousBlood |C7 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

0.15

### 0.5 — Installation — Computed Onto

Organism|PeripheralVenousBlood|C7|Plasma (Peripheral Venous Blood)

**Figure 1.211** 

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: Single IV\_C7\_4 Comp\_schmitt\_standard\_standa$ 

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

Output Path: Organism |PeripheralVenousBlood |C7 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

0.15

### Organism|PeripheralVenousBlood|C7|Plasma (Peripheral Venous Blood)

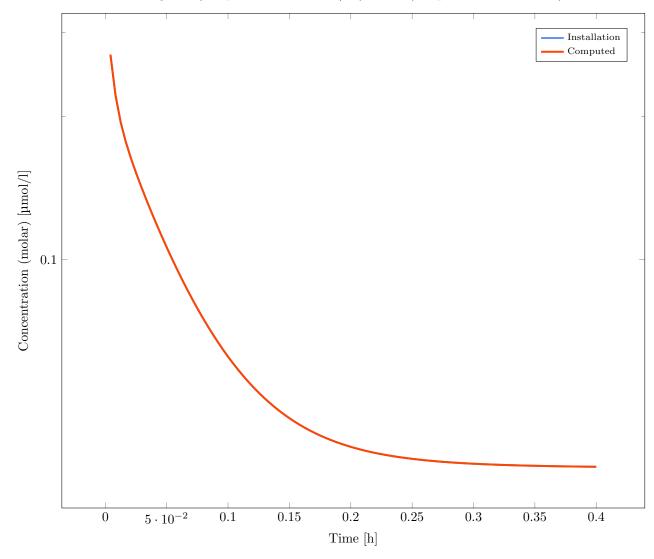


Figure 1.212

 $Simulation: Single IV\_C8\_2 Pores\_standard\_schmittnormalized\_standard\_Single IV\_C8\_2 Pores\_standard\_schmittnormalized\_schmittnormalized\_schmittnor$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C8|Plasma (Peripheral Venous Blood)

Deviation: 0

# $Organism | Peripheral Venous Blood | C8 | Plasma \ (Peripheral Venous Blood)$

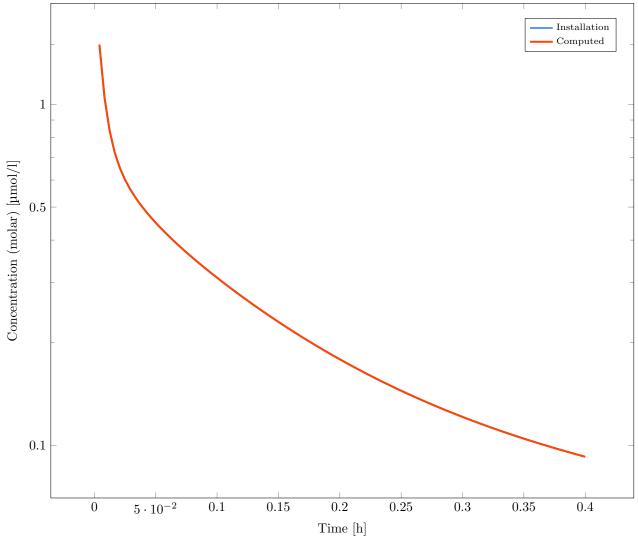


Figure 1.213

 $Simulation: Single IV\_C9\_2 Pores\_schmitt\_standard\_standard\_Single IV\_C9\_2 Pores\_schmitt\_standard\_sta$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C9|Plasma\ (Peripheral\ Venous\ Blood)$ 

# Organism|PeripheralVenousBlood|C9|Plasma (Peripheral Venous Blood) Installation Computed 2 1.5

Figure 1.214

0.15

0.1

 $Simulation: Single ORAL\_C10\_4 Comp\_PT\_standard\_standard-Single ORAL\_C10\_4 Comp\_PT\_standard-Single ORAL\_C10\_4 Comp\_Single ORAL\_C10\_4 C00\_4 C00\_$ 

0.2

Time [h]

0.25

0.3

0.35

0.4

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

1.2

Output Path: Organism |PeripheralVenousBlood |C10 |Plasma (Peripheral Venous Blood)<br/> Deviation: 0

### Organism|PeripheralVenousBlood|C10|Plasma (Peripheral Venous Blood)

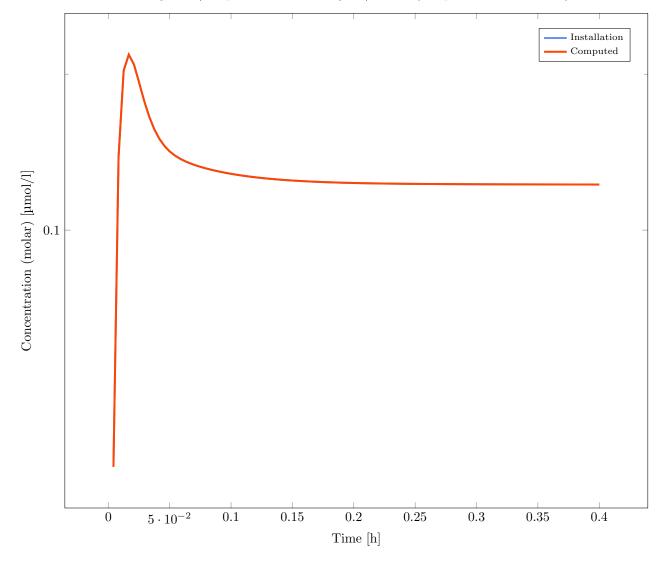


Figure 1.215

 $Simulation: Single ORAL\_C11\_4 Comp\_schmitt\_standard\_standard\_Single ORAL\_C11\_4 Comp\_schmitt\_standard$ 

Result of the validation: Valid

 $\label{eq:continuous} Output\ Path:\ Organism | Peripheral Venous Blood) \\ Peripheral Venous Blood)$ 

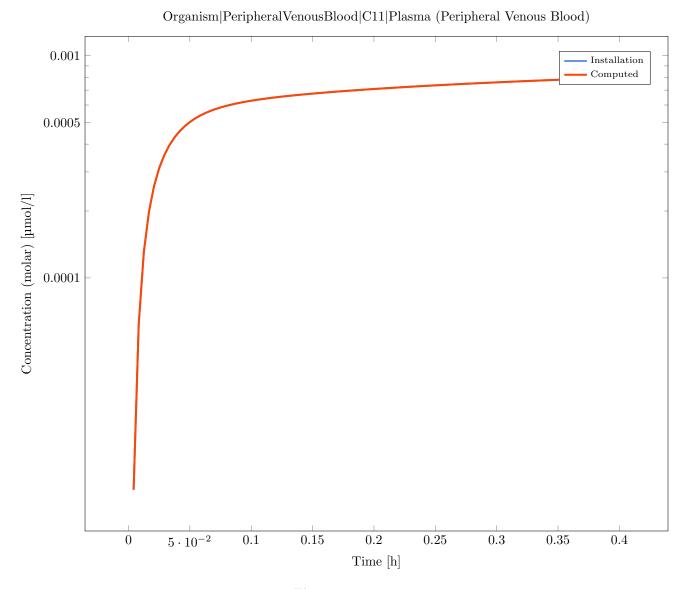


Figure 1.216

 $Simulation: Single ORAL\_C11\_4 Comp\_standard\_st$ 

Result of the validation: Valid

### Organism|PeripheralVenousBlood|C11|Plasma (Peripheral Venous Blood)

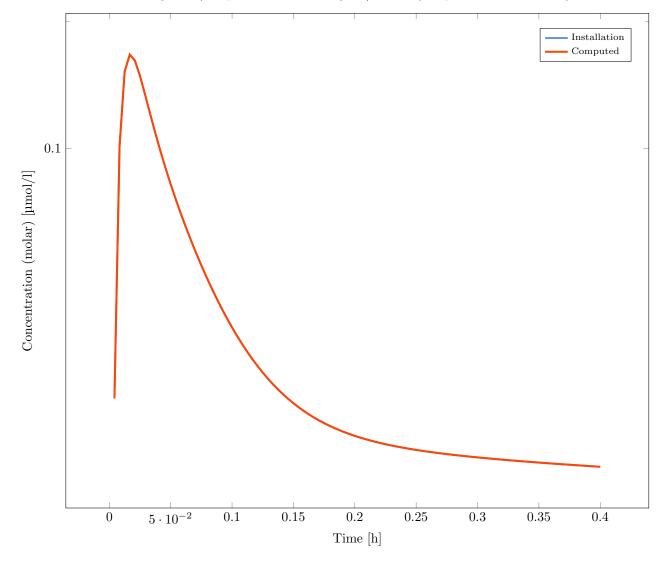


Figure 1.217

 $Simulation: Single ORAL\_C12\_4 Comp\_standard\_schmitt\_standard-Single ORAL\_C12\_4 Comp\_standard\_schmitt\_standard\\$ 

Result of the validation: Valid

 $Output \ Path: \ Organism | Peripheral Venous Blood | C12 | Plasma \ (Peripheral \ Venous \ Blood)$ 

# 

Organism|PeripheralVenousBlood|C12|Plasma (Peripheral Venous Blood)

Figure 1.218

0.15

0.1

 $Simulation: Single ORAL\_C13\_2 Pores\_schmitt\_standard\_st$ 

0.2

Time [h]

0.25

0.35

0.3

0.4

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 



Figure 1.219

 $Simulation: Single ORAL\_C13\_4 Comp\_standard\_schmittnormalized\_schmittnormalized\_sc$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |C13 |Plasma (Peripheral Venous Blood)<br/> Deviation:  $\bf 0$ 





Figure 1.220

 $Simulation: Single ORAL\_C14\_2 Pores\_PT\_standard\_standard\_Single ORAL\_C14\_2 Pores\_PT\_standard\_standar$ standard

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C14|Plasma (Peripheral Venous Blood)

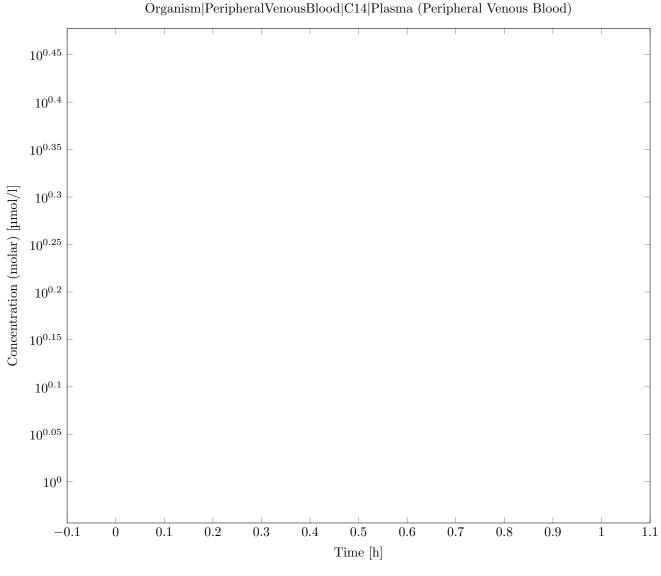
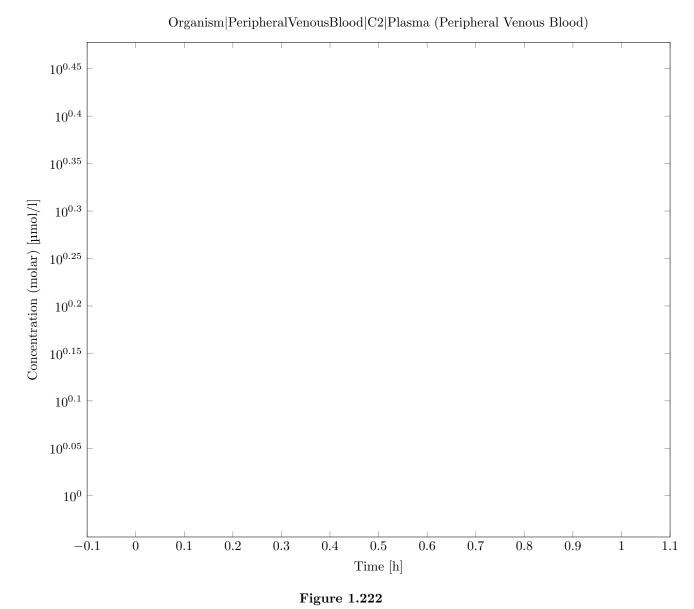


Figure 1.221

 $Simulation: Single ORAL\_C2\_2 Pores\_standard\_st$ 

Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C2 |Plasma (Peripheral Venous Blood) Deviation:<br/> 0



 $Simulation: Single ORAL\_C3\_2 Pores\_standard\_schmitt\_standard-Single ORAL\_C3\_2 Pores\_standard\_schmitt\_standard$ 

Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C3 |Plasma (Peripheral Venous Blood) Deviation:<br/> 0

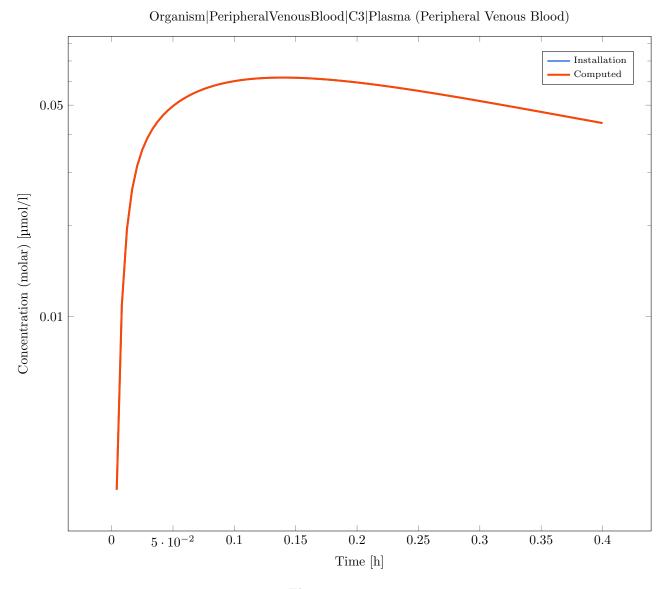


Figure 1.223

 $Simulation: Single ORAL\_C4\_2 Pores\_standard\_schmittnormalized\_standard\_Single ORAL\_C4\_2 Pores\_standard\_schmittnormalized\_standard$ 

Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C4 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 

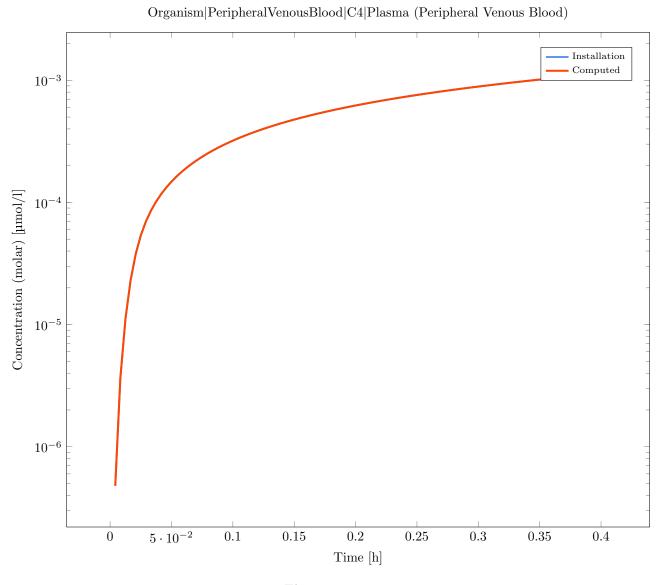


Figure 1.224

 $Simulation: Single ORAL\_C6\_4 Comp\_Ber\_standard\_standard\_Single ORAL\_C6\_4 Comp\_Ber\_standard\_$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |C6 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 



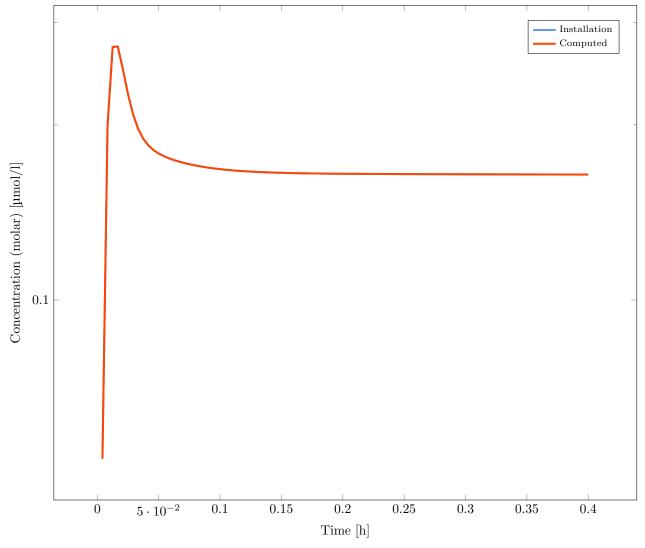


Figure 1.225

 $Simulation: Single ORAL\_C6\_4 Comp\_RR\_standard\_standard\_Single ORAL\_C6\_4 Comp\_RR\_standard\_st$ 

Result of the validation: Valid

 $Output\ Path:\ Organism|Peripheral Venous Blood|C6|Plasma\ (Peripheral\ Venous\ Blood)$ 

# 

Figure 1.226

0.2

Time [h]

0.25

0.3

0.35

0.4

 $Simulation: Single ORAL\_C7\_2 Pores\_Ber\_standard\_standard\_Single ORAL\_C7\_2 Pores\_Ber\_standard\_standar$ 

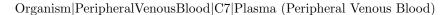
Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

0.1

0.15



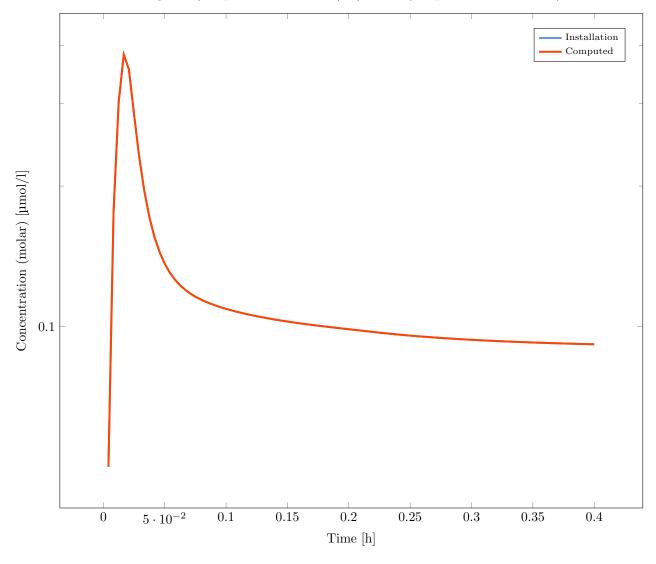


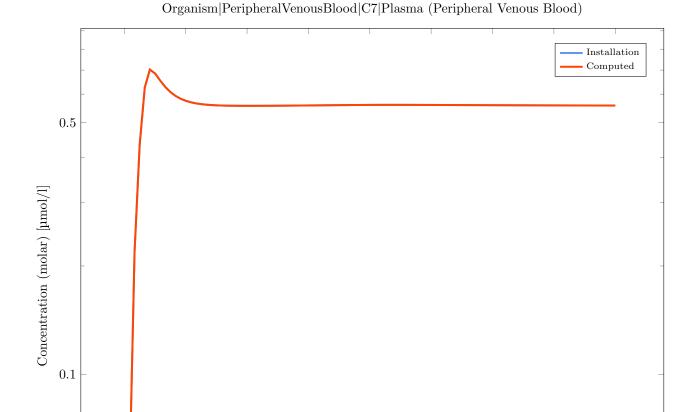
Figure 1.227

 $Simulation: Single ORAL\_C7\_4 Comp\_RR\_schmitt\_standard-Single ORAL\_C7\_5 Comp\_RR\_schmitt\_standard-Single ORAL\_C7\_5$ 

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C7|Plasma (Peripheral Venous Blood)

Deviation: 1.06E-7



Time [h] Figure 1.228

0.2

0.25

0.3

0.35

0.4

0.15

0.1

 $Simulation: Single ORAL\_C8\_2 Pores\_RR\_standard\_standard\_Single ORAL\_C8\_2 Pores\_RR\_standard\_$ standard

Result of the validation: Valid

0

 $5\cdot 10^{-2}$ 

Output Path: Organism|PeripheralVenousBlood|C8|Plasma (Peripheral Venous Blood)

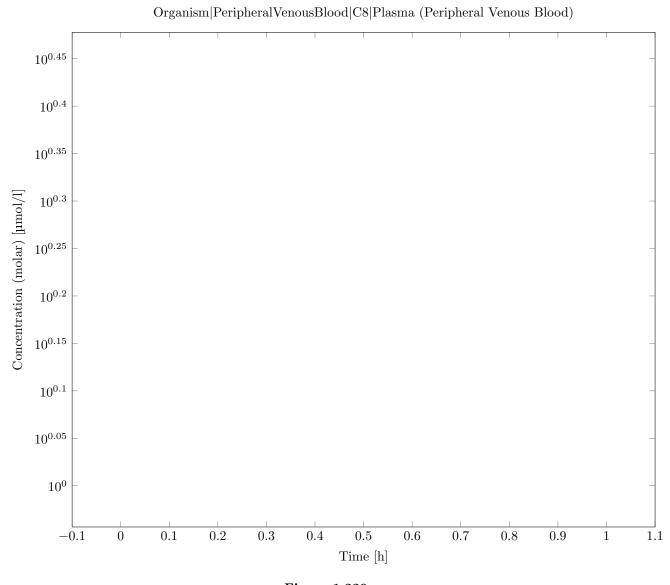
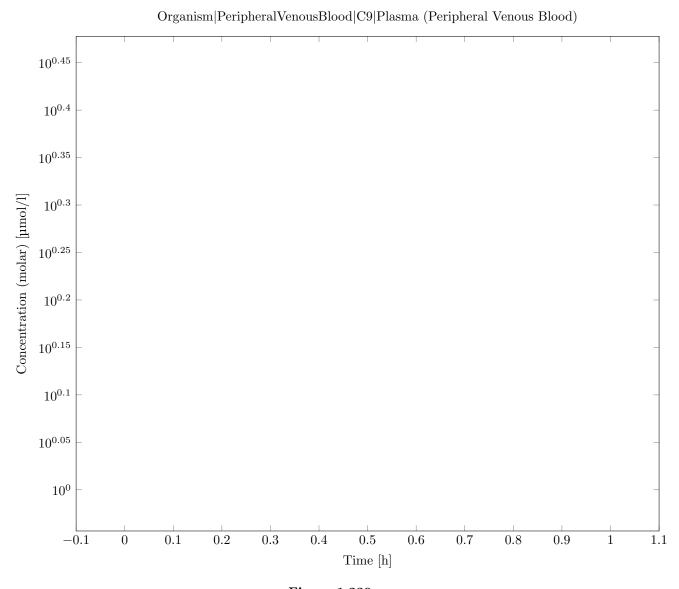


Figure 1.229

 $Simulation: Single ORAL\_C9\_2 Pores\_RR\_schmitt\_standard-Single ORAL\_SChmitt\_standard-Single ORAL\_SChmitt\_standard-Single ORAL\_Schmitt\_Standard-Single ORAL\_Schmitt\_Standard-Single ORAL\_Schmitt$ 

Result of the validation: Valid

Output Path: Organism |PeripheralVenousBlood |C9 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 



 ${\bf Figure~1.230}$ 

 $Simulation: \ Test\ 18.1\_I1\_C1\_A1\_Config1-Test\ 18.1\_I1\_C1\_A1\_Config1$ 

Result of the validation: Valid



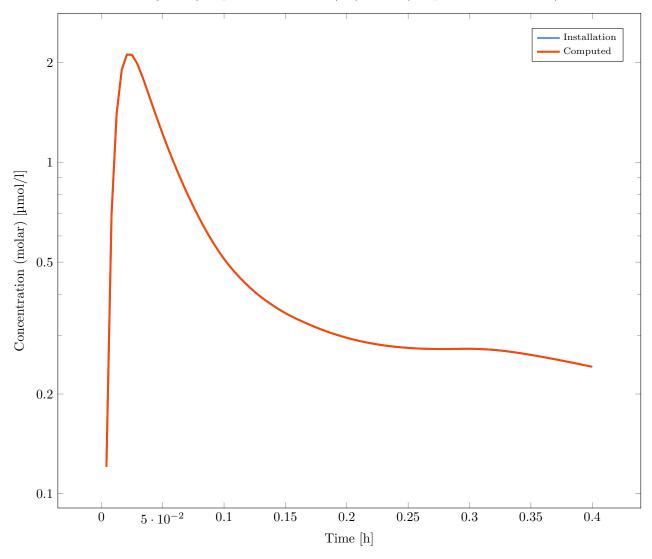
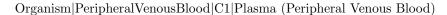


Figure 1.231

Simulation: Test 18.1\_I2\_C1\_A1\_Config2-Test 18.1\_I2\_C1\_A1\_Config2

Result of the validation: Valid

Output Path: Organism |Peripheral Venous<br/>Blood |C1 |Plasma (Peripheral Venous Blood)<br/> Deviation:  ${\bf 0}$ 



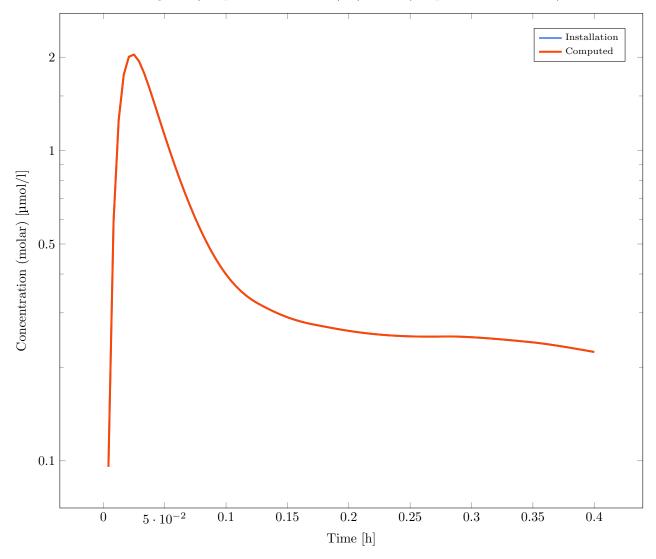


Figure 1.232

Simulation: Test 18.1\_I2\_C3\_A1\_Config2-Test 18.1\_I2\_C3\_A1\_Config2 Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C3|Plasma (Peripheral Venous Blood)

5

1

0

 $5\cdot 10^{-2}$ 

# Installation 20 Computed 10 Concentration (molar) [µmol/1]

Organism|PeripheralVenousBlood|C3|Plasma (Peripheral Venous Blood)

Figure 1.233

0.2

Time [h]

0.25

0.3

0.35

0.4

Simulation: Test 18.1\_I3\_C3\_A3\_Config2-Test 18.1\_I3\_C3\_A3\_Config2

0.1

Result of the validation: Valid

Output Path: Organism|PeripheralVenousBlood|C3|Plasma (Peripheral Venous Blood) Deviation: 0

0.15

## $Organism|Peripheral Venous Blood|C3|Plasma\ (Peripheral Venous Blood)$

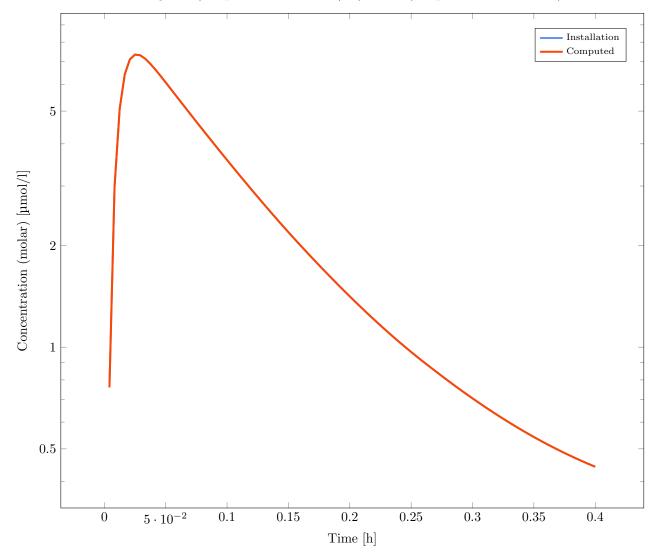


Figure 1.234