

Important Menu Items

1. Sacubitril

- Intervention → Drugs → Sacubitril → Kinetics

2. Valsartan

- Intervention → Drugs → Valsartan → Kinetics

3. BNP

- Hormones → BNP → Pool/Secretion

4. Determinants of left ventricle hypertrophy

- Circulation → Left Heart Pumping → Contractile Protein

5. Nephron damage

- Organs → Nephrons → Nephron Count

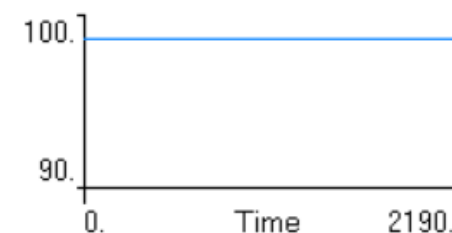
Gen
Age
Hei
Wei
- My
Blo
160
M
80
BP (mmHg)
Res (L/min)
10

1 Sec
5 Sec
10 Sec
1 Min
5 Min
10 Min
30 Min
1 Hour
6 Hours
12 Hours
1 Day
1 Week
30 Days
60 Days
90 Days
To Next Hour
To Next Day
To Next Week
To Next 30 Days

12:30 PM 0 Sec Tue Day 2

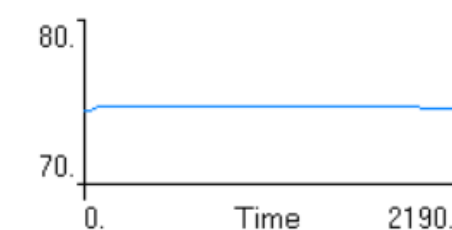
BMI = 30.8
Adiposity = Normal
Muscularity = Normal
ECG = Normal

Temperature (F) = 98.6



Temperature (C) = 37.0

Heart Rate = 74.7



Salt Intake (mEq/Day) = 150.

K+ Intake (mEq/Day) = 20.

Atrial Receptor Time Constant (days) = 2.

Sympathetic HTN (1-20) = 10.

Heart Failure = 1.

Plasma ANG II Clamp = 0.

Plasma ANP Clamp = 0.

Right Kidney Nephron Count = 300000 Delay (days) = 30.

Left Kidney Nephron Count = 300000 Delay (days) = 30.

Baroreflex activation level = 0. BAT ☒ Off ☐ On

Left RSNA = 0.

Left Kidney RSNA Clamp ☒ Off ☐ On

Right RSNA = 0.

Right Kidney RSNA Clamp ☒ Off ☐ On

Cardiac SNA = 0.

Cardiac SNA Clamp ☒ Off ☐ On

Heart Rate = 0.

Heart Rate Clamp ☒ Off ☐ OnHyperfiltration-induced Injury? ☐ Off ☒ On Glomerulosclerosis Delay = 2.**ARNI**Start Sacubitril? ☐ No ☒ Yes

Sacubitril Dose (mg) = 25. Times A Day = 2.

Start Valsartan? ☐ No ☒ Yes

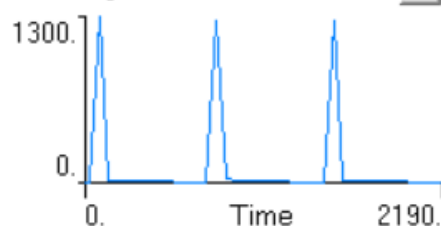
Valsartan Dose (mg) = 25. Times A Day = 2.

Sacubitril Kinetics

12:30 PM 0 Sec Tue Day 2

GI Lumen

[Sacubitril] = 0.0



Mass = 0.0
Change = -0.0
Permeability = 0.100

ECFV

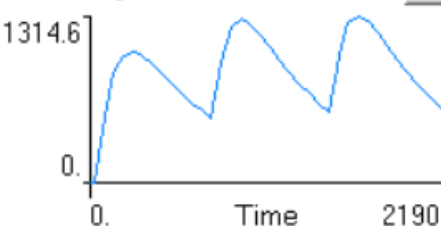
Sacubitril (ng/mL) = 3577.51



Mass = 52368.3
Change = -13.74
Gain = 0.00
Loss = 13.74
ECFV = 14.64

ECFV

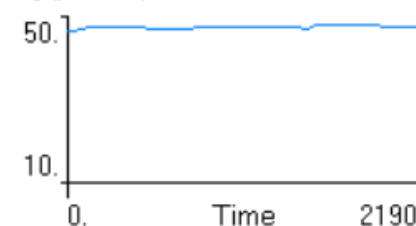
[Valsartan] = 555.97



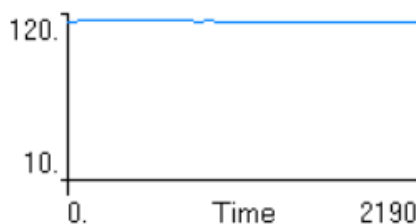
Mass = 8138.4
Change = -15.01
Gain = 0.78
Loss = 15.79
AT1R Effect = 0.88

Sacubitril Effects on ANP

[ANP] (pMol/L) = 47.2



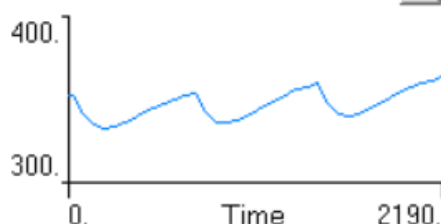
Degradation = 0.1675
ANP Clearance (pMol/min) = 113.3



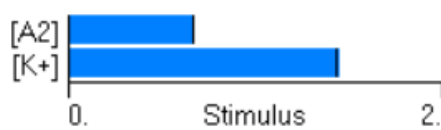
ARNI Effect = 1.0

[A2] Effect on Aldosterone Secretion

Secretion Rate = 362.9



Clamp ☒ Off ☐ On
Level = 0.

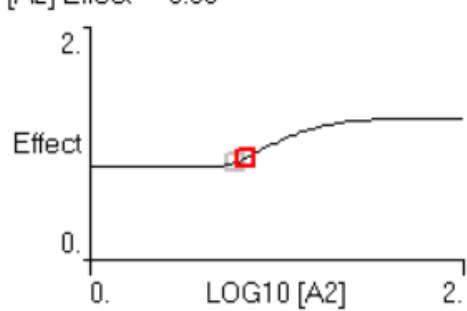


Base = 360.

[A2] Effect on Left Nephron Fractions

Fraction = 0.39

[A2] Effect = 0.80

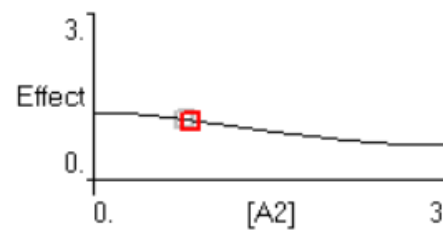


LOG10 [A2] = 0.8

[A2] Effect on Efferent Artery

Left

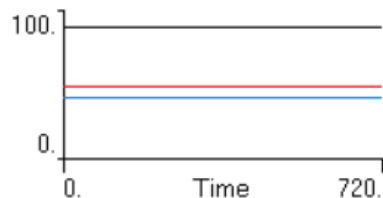
Effect = 1.10



Log10 [A2] = 0.8

Mass

Mass = 88.6



Functional = 40.2

Functional = 40.2 F:FM Ratio = 0.8

Ischemic = 0.0 Effect = 0.8

Dead = 0.0

Fibrotic Mass = 48.4

Contractile Gain = 0.00080

Contractile Gain K = 5.e-004

Contractile Loss = 0.00080

Contractile Loss K = 2.e-005

Noncontractile Gain = 0.000970

Noncontractile Gain K = 7.5e-004

Noncontractile Loss = 0.000968

Noncontractile Loss K = 2.e-005

Adaptation

B-receptor time K = 1.e-005

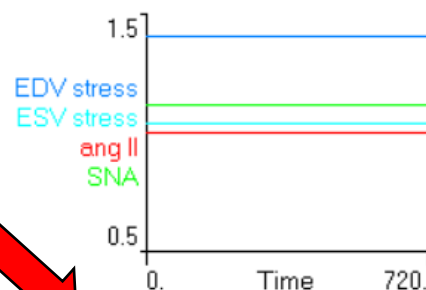
B-receptor adapt % = 0.

a-receptor time K = 1.e-005

a-receptor adapt % = 1.e-001

Hypertrophy (contractile mass)

Multiplier = 1.

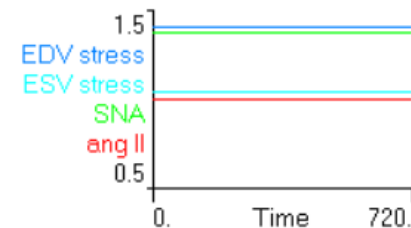


Left Ventricle Mass (g) = 214.8

Delay = 30.

Fibrotic Partition (non-contractile)

Partition = 0.35



[AngII] = 6.0

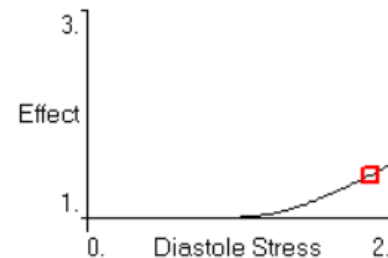
Symps = 1.6

Adequacy = 1.0

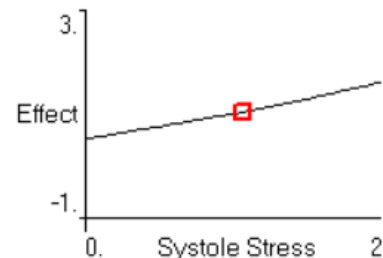
Heart Failure = 1.

Contractile Protein Hypertrophy

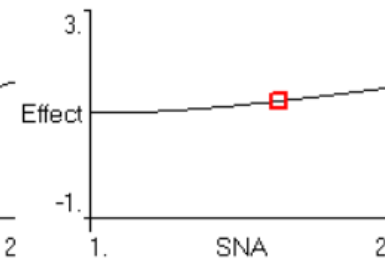
EDV Effect = 1.4



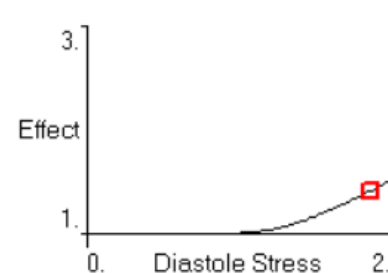
ESV Effect = 1.0



SNA Effect = 1.1

**Fibrosis**

EDV Effect = 1.4



ESV Effect = 1.0



SNA Effect = 1.4

