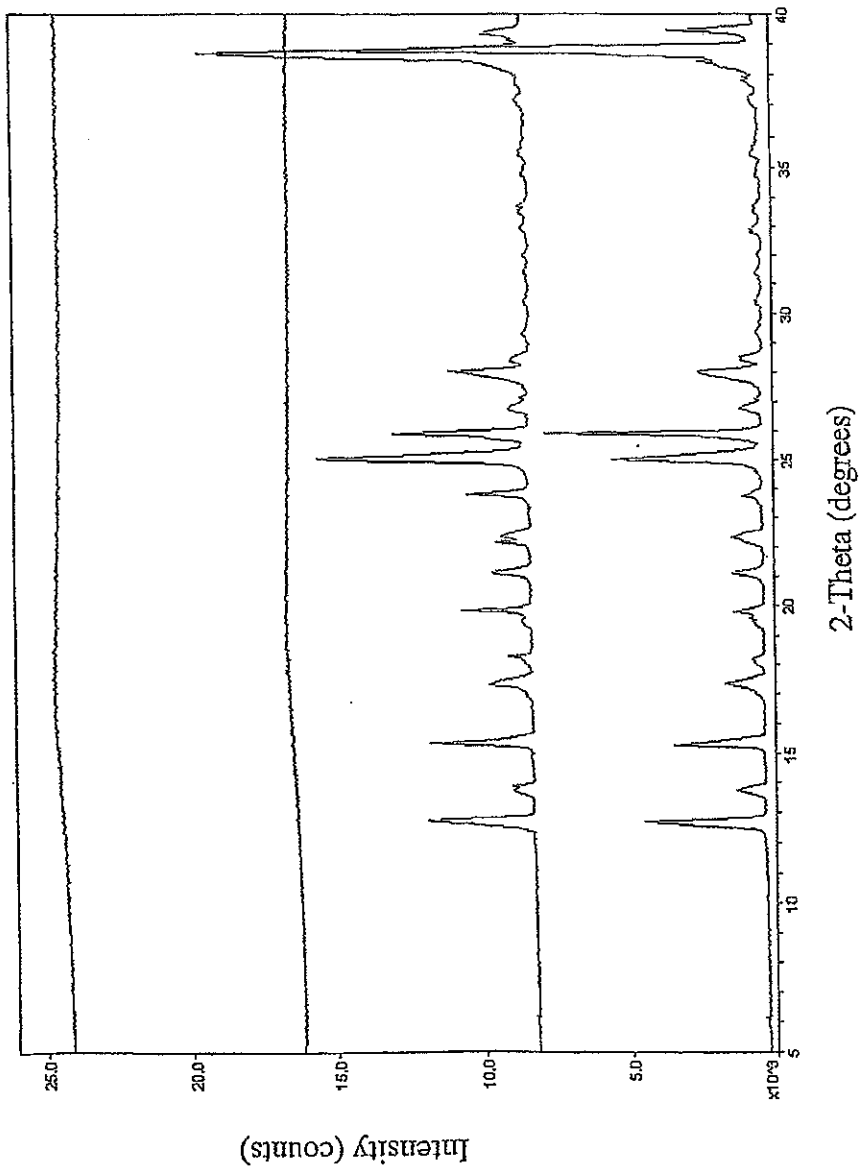

Intensity (counts)
25.0
20.0
15.0
10.0
5.0
x10^3
5
10
15
20
25
30
35
40
2-Theta (degrees)

Figure 1A

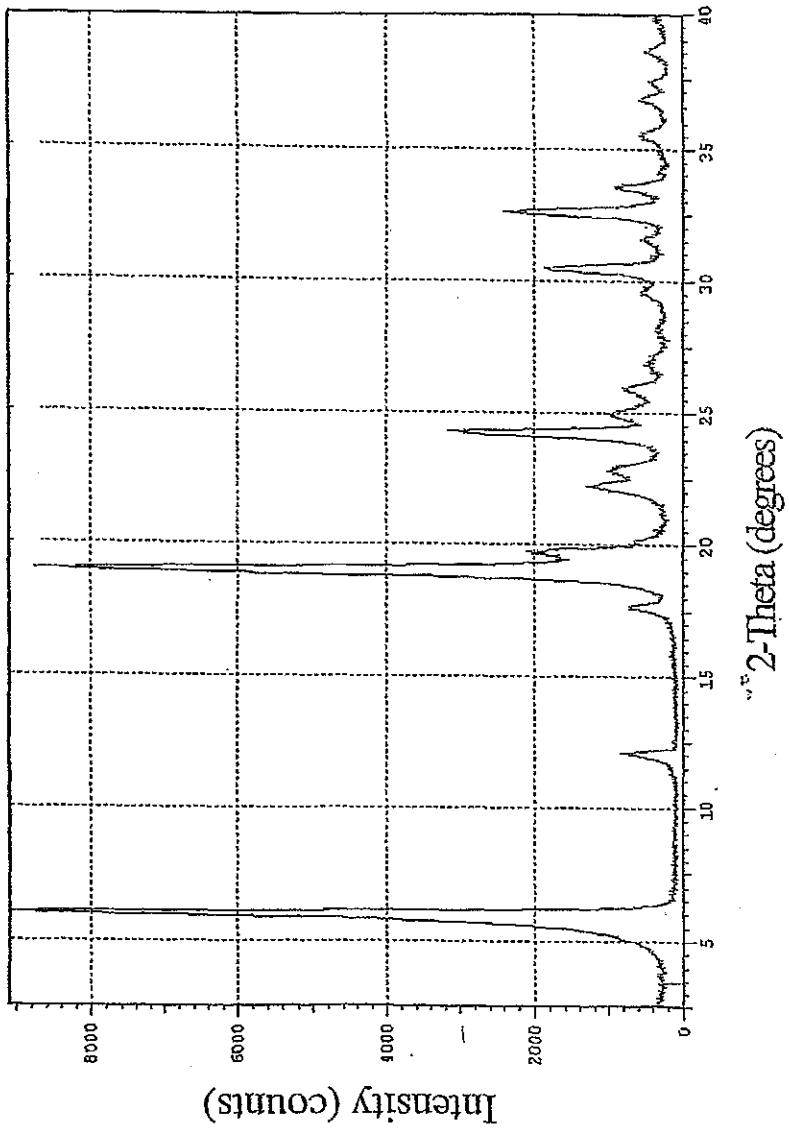

Intensity (counts)
8000
6000
4000
2000
0
5
10
15
20
25
30
35
40
2-Theta (degrees)

FIGURE 1B

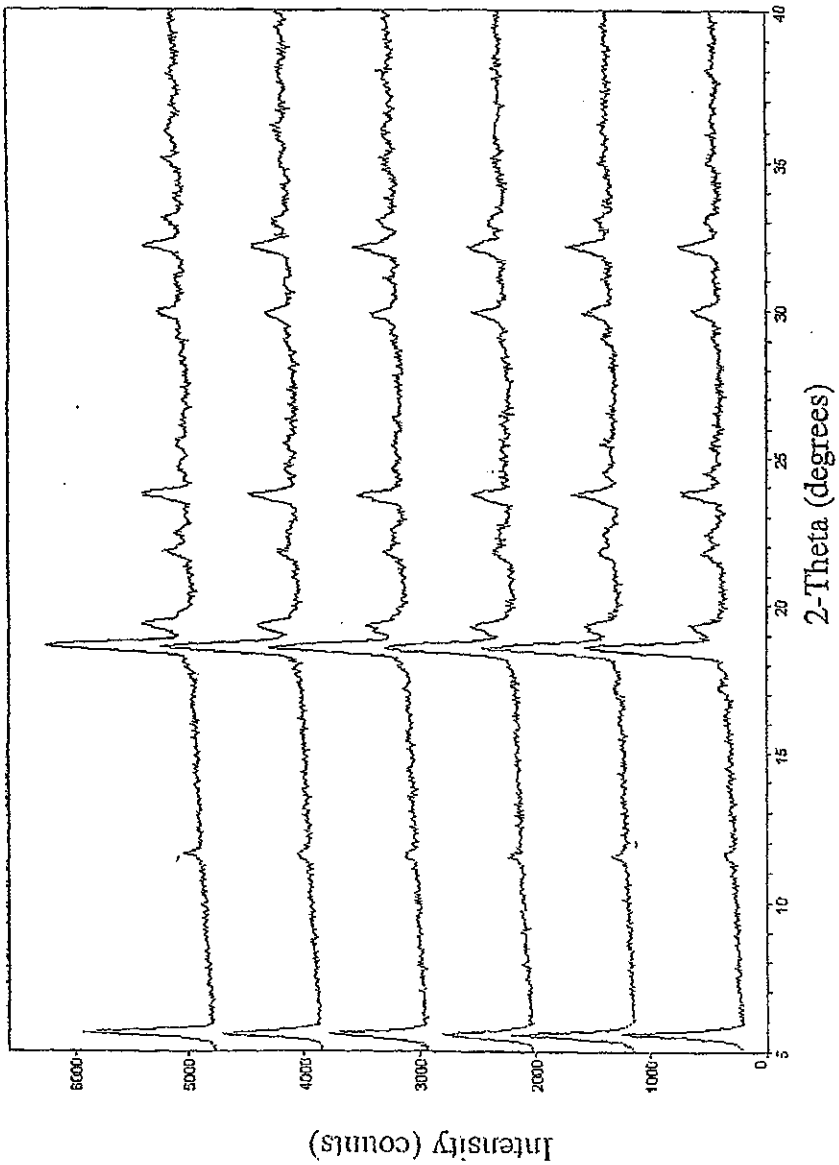

Intensity (counts)
6000
5000
4000
3000
2000
1000
0
5
10
15
20
25
30
35
40
2-Theta (degrees)

Figure 1C

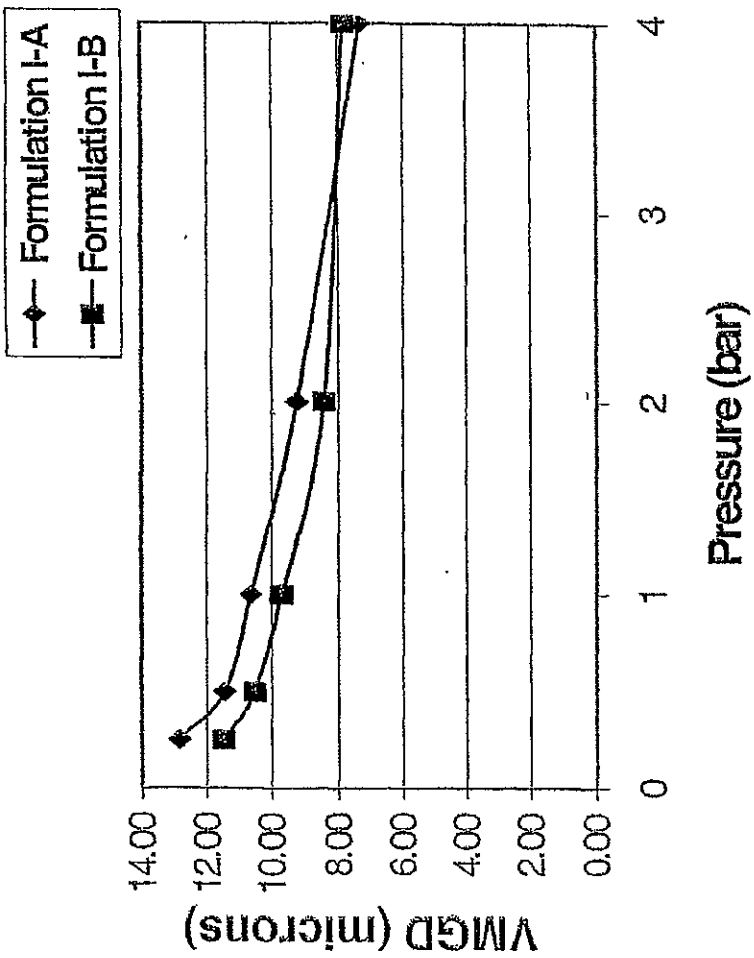

Formulation I-A
Formulation I-B
VMGD (microns)
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
1
2
3
4
Pressure (bar)

Figure 2

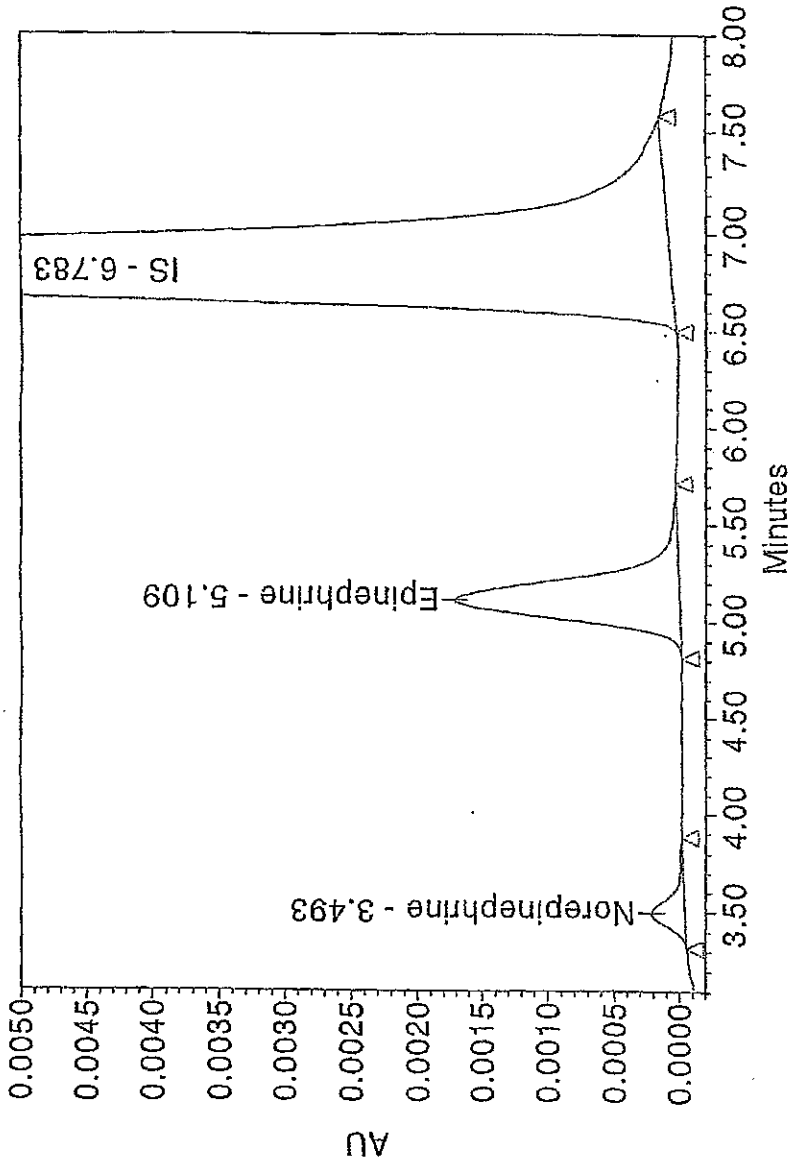

AU
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
Norepinephrine - 3.493
Epinephrine - 5.109
IS - 6.783
3.50
4.00
4.50
5.00
5.50
6.00
6.50
7.00
7.50
8.00
Minutes

Figure 3A

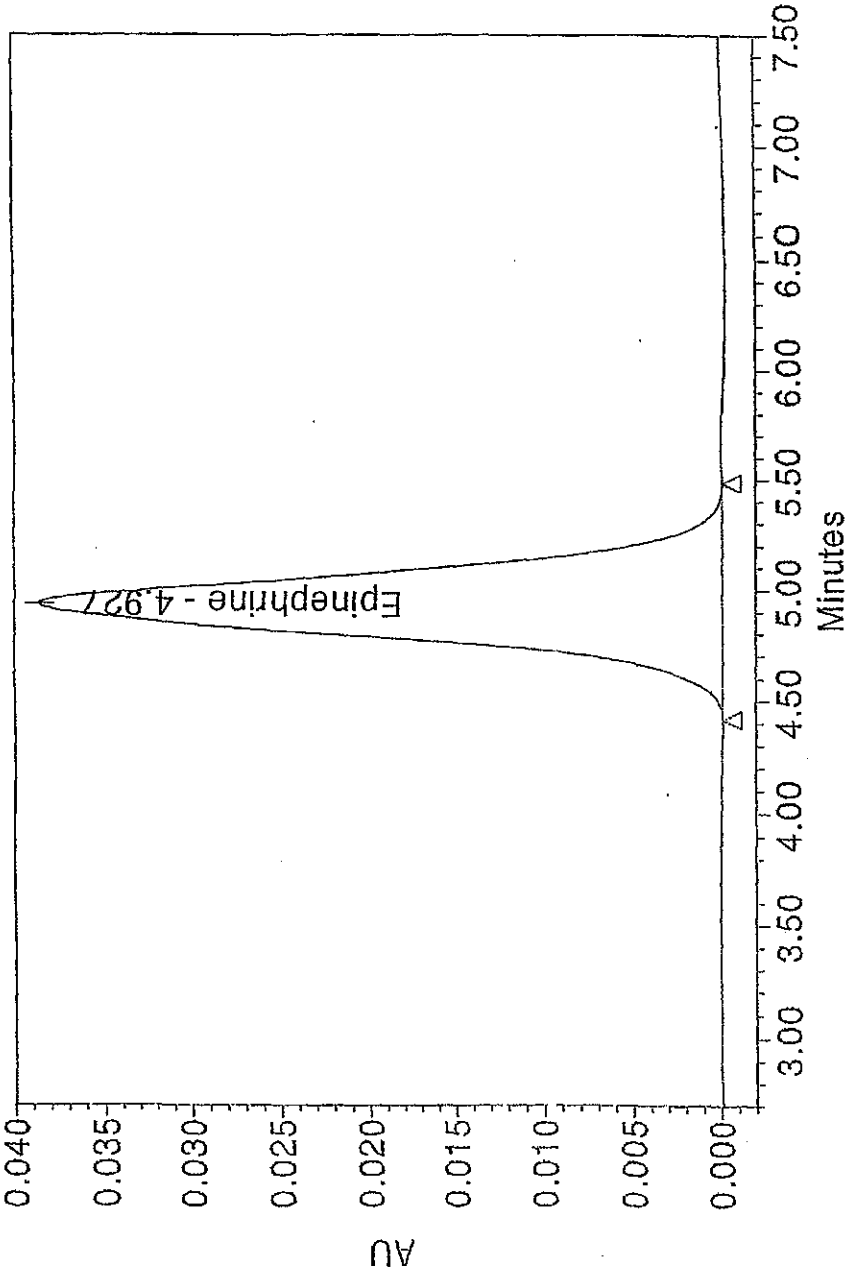

Epinephrine - 4.927
AU
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
3.00
3.50
4.00
4.50
5.00
5.50
6.00
6.50
7.00
7.50
Minutes

Figure 3B

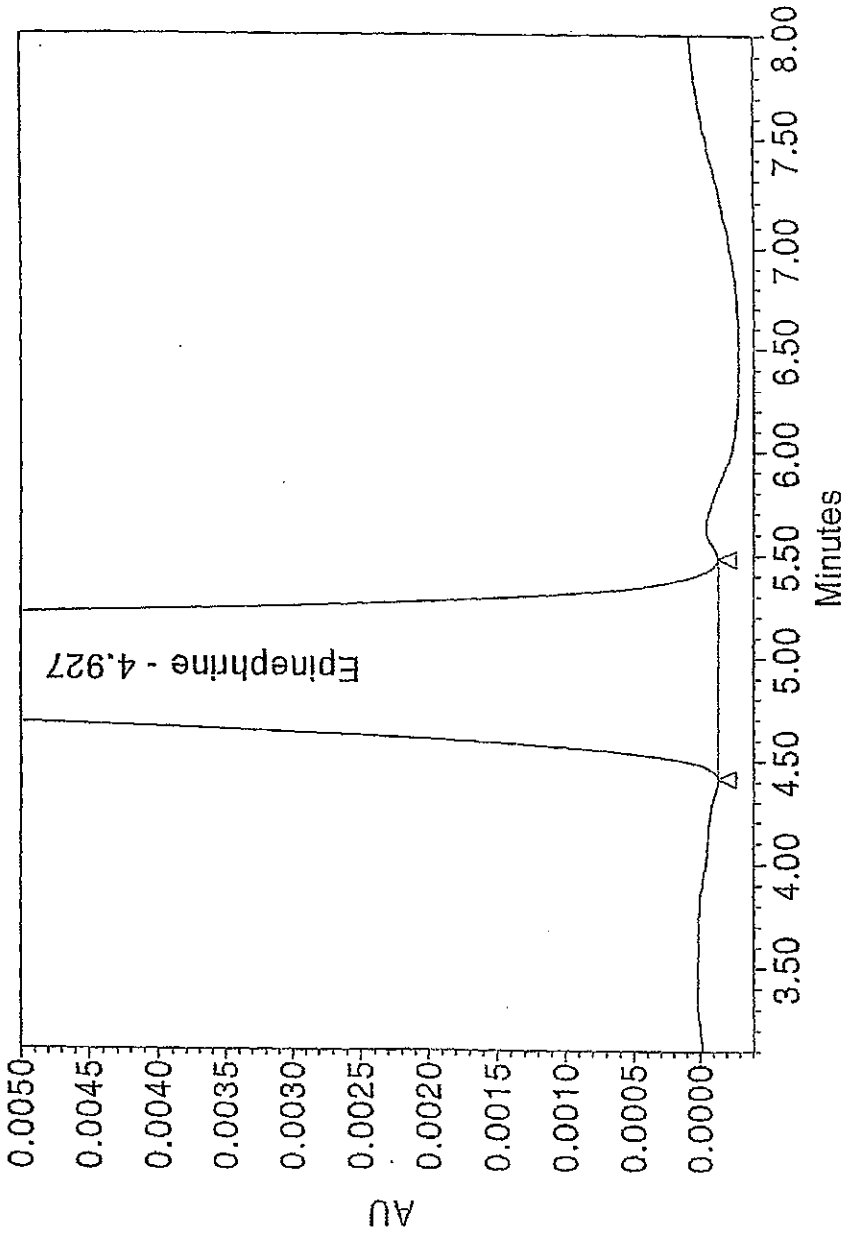

Epinephrine - 4.927
AU
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
3.50
4.00
4.50
5.00
5.50
6.00
6.50
7.00
7.50
8.00
Minutes

Figure 3C

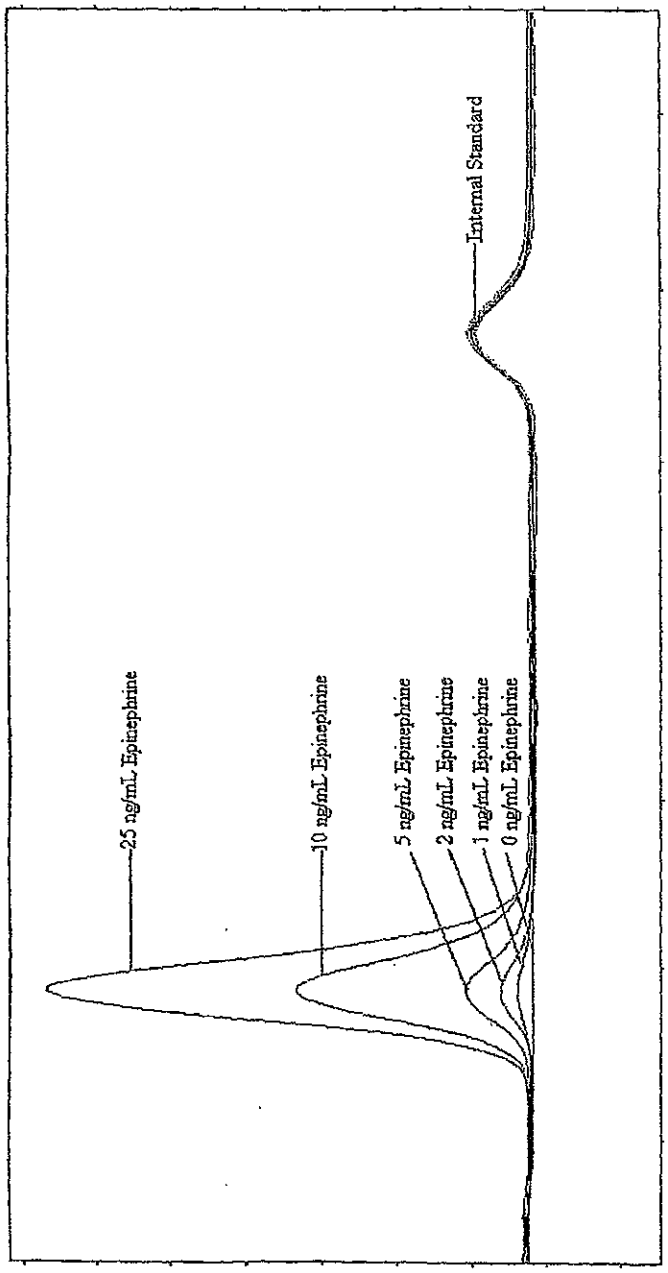

Internal Standard
25 ng/mL Epinephrine
10 ng/mL Epinephrine
5 ng/mL Epinephrine
2 ng/mL Epinephrine
1 ng/mL Epinephrine
0 ng/mL Epinephrine

Figure 4A

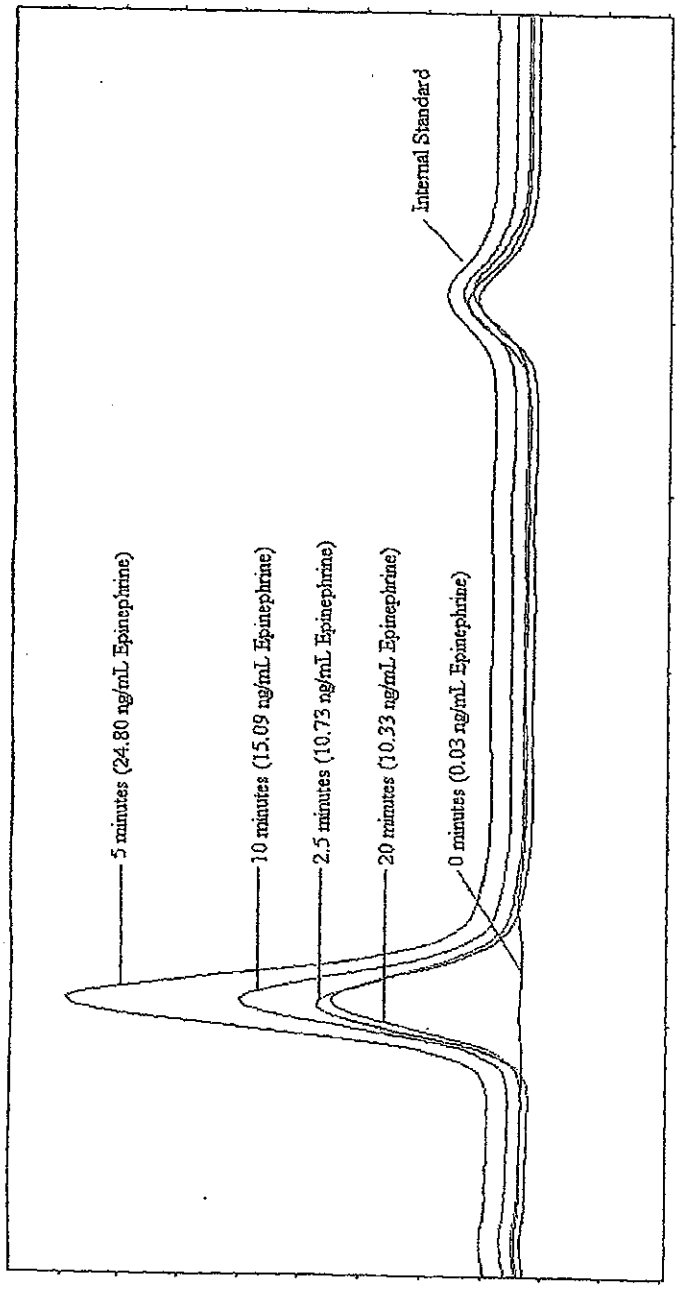

Internal Standard
5 minutes (24.80 ng/mL Epinephrine)
10 minutes (15.09 ng/mL Epinephrine)
2.5 minutes (10.73 ng/mL Epinephrine)
20 minutes (10.33 ng/mL Epinephrine)
0 minutes (0.03 ng/mL Epinephrine)

Figure 4B

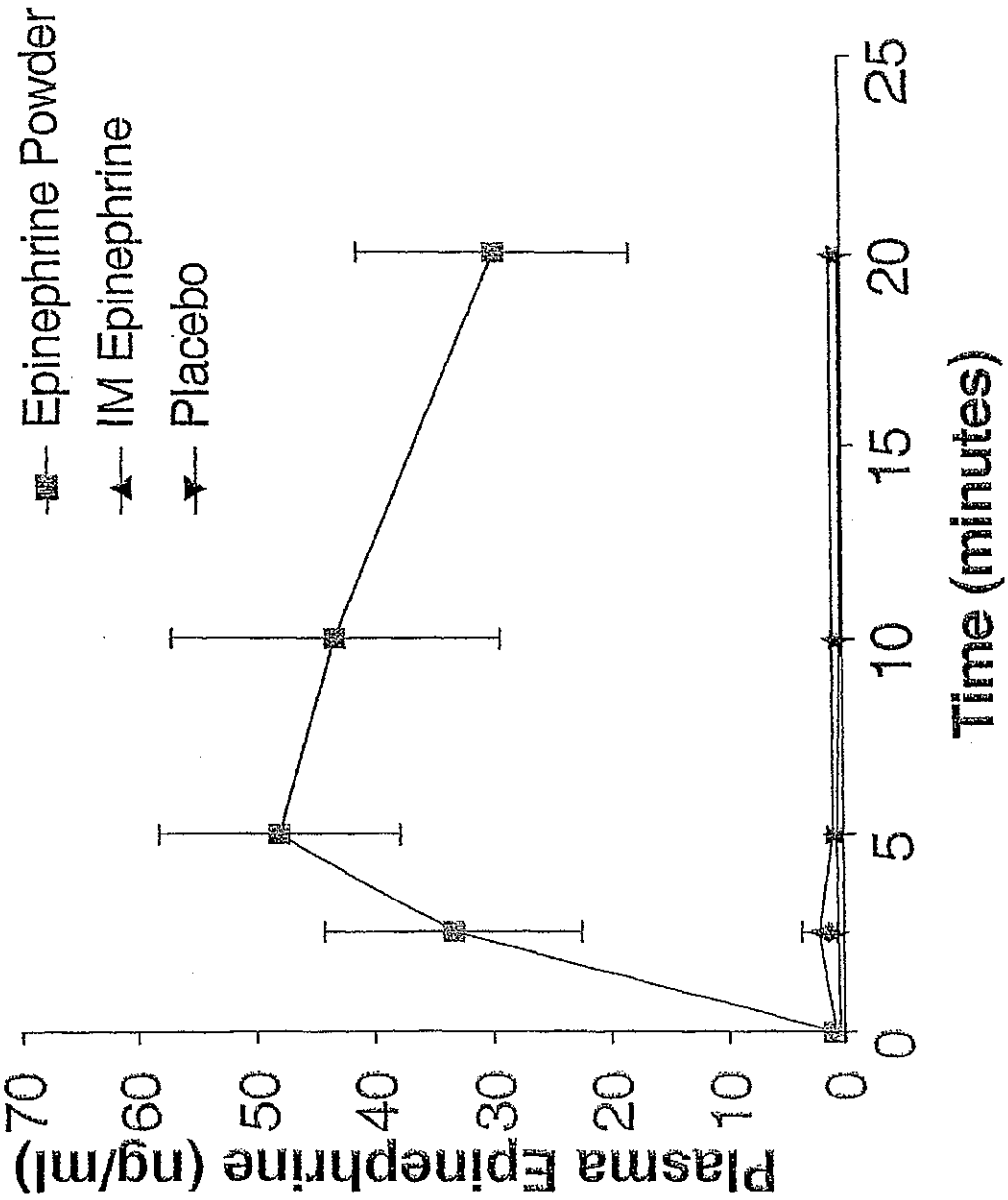

Epinephrine Powder
IM Epinephrine
Placebo
Plasma Epinephrine (ng/ml)
70
60
50
40
30
20
10
0
0
5
10
15
20
25
Time (minutes)

Figure 5

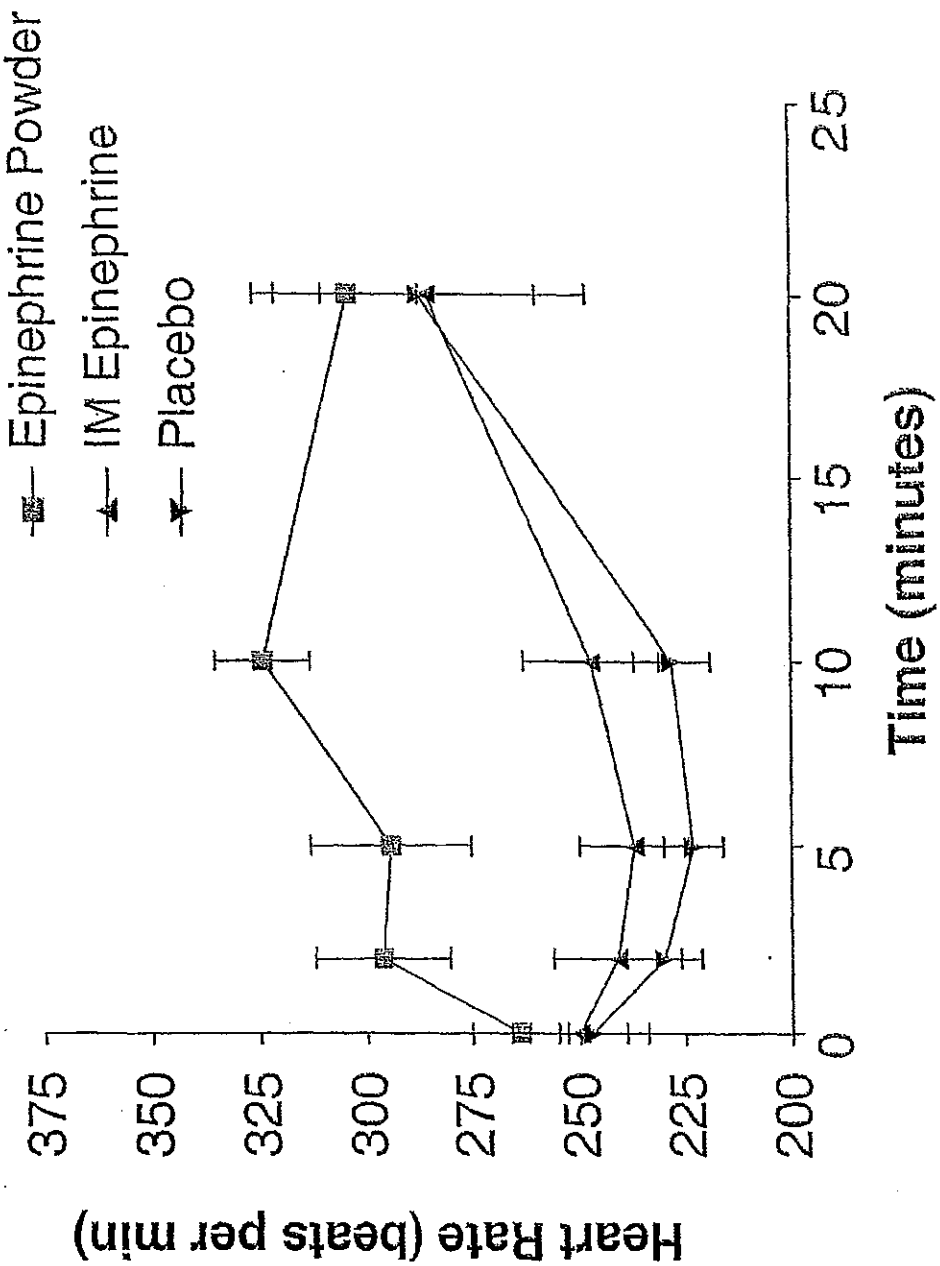

Epinephrine Powder
IM Epinephrine
Placebo
Heart Rate (beats per min)
375
350
325
300
275
250
225
200
0
5
10
15
20
25
Time (minutes)

Figure 6

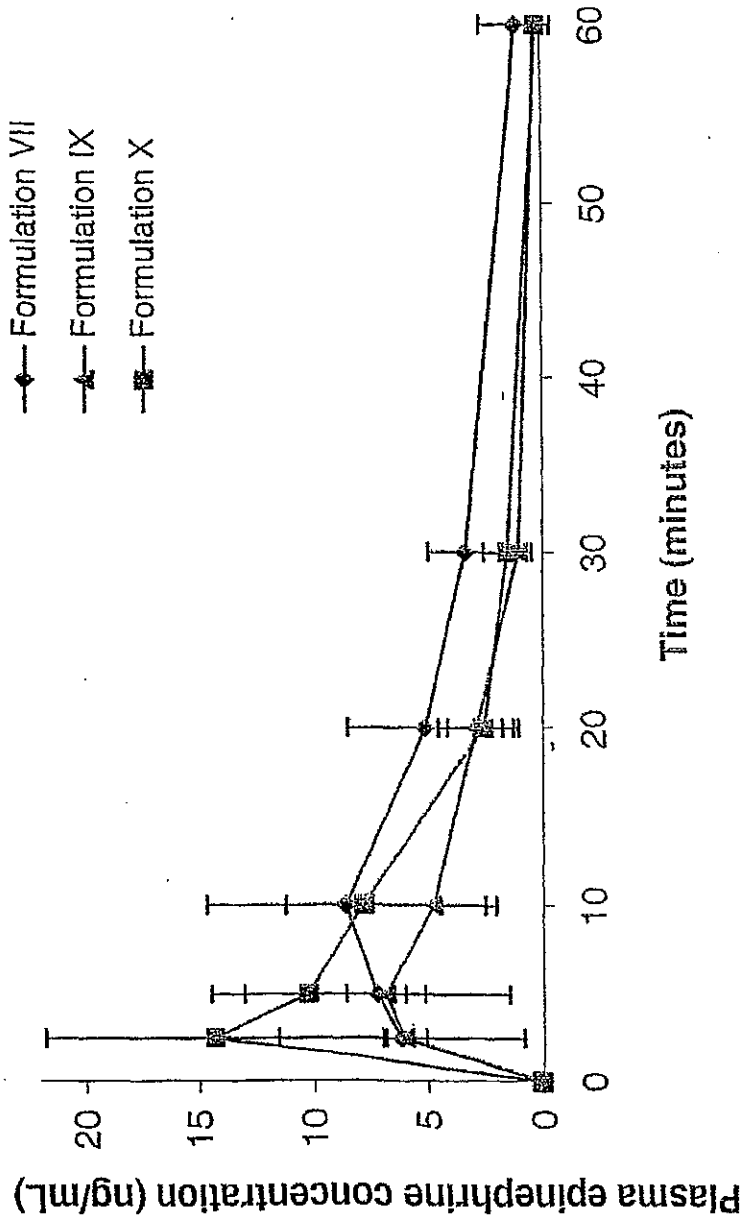

Formulation VII
Formulation IX
Formulation X
Plasma epinephrine concentration (ng/mL)
0
5
10
15
20
0
10
20
30
40
50
60
Time (minutes)

Figure 7

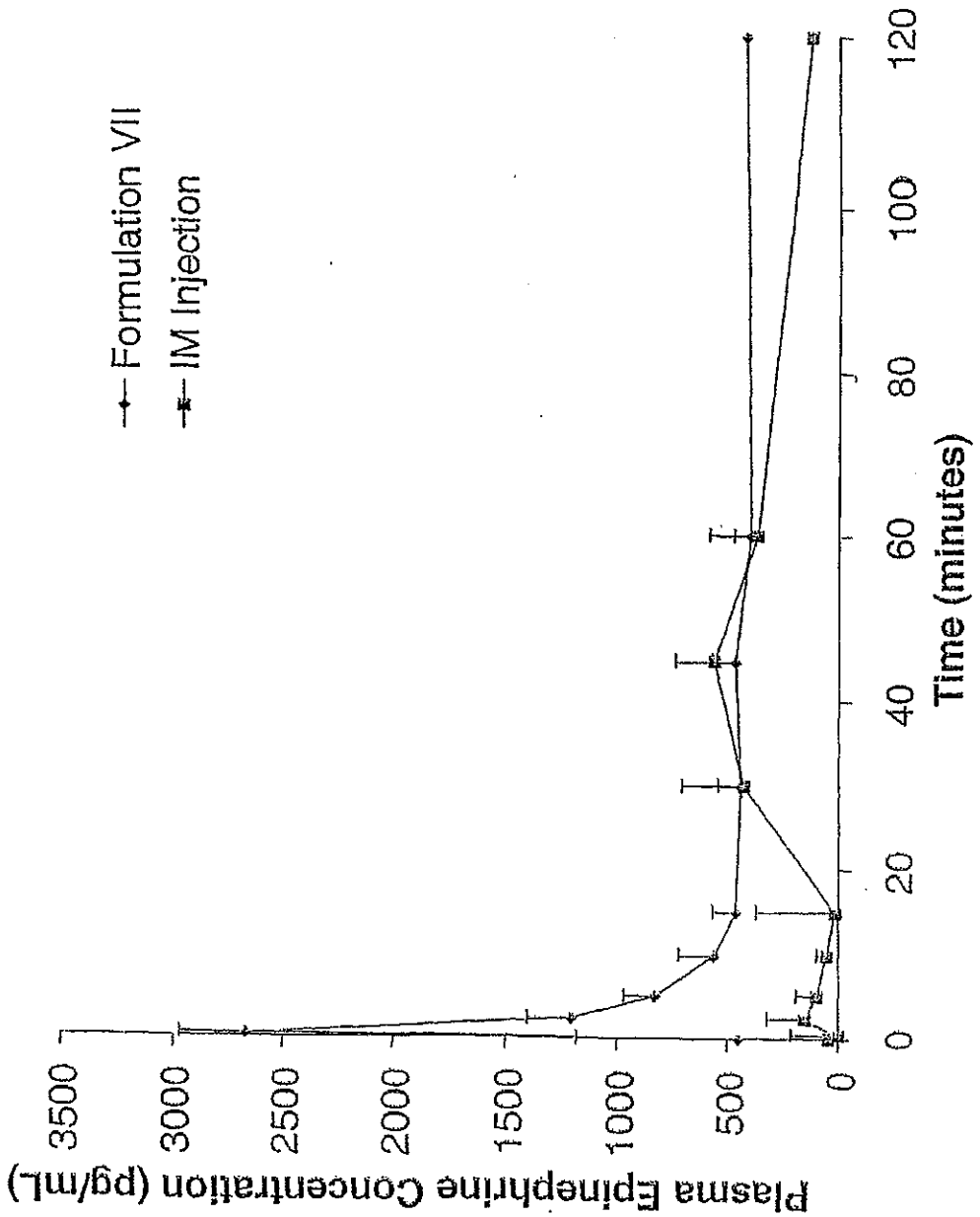

Plasma Epinephrine Concentration (pg/mL)
3500
3000
2500
2000
1500
1000
500
0
0
20
40
60
80
100
120
Time (minutes)
Formulation VII
IM Injection

Figure 8

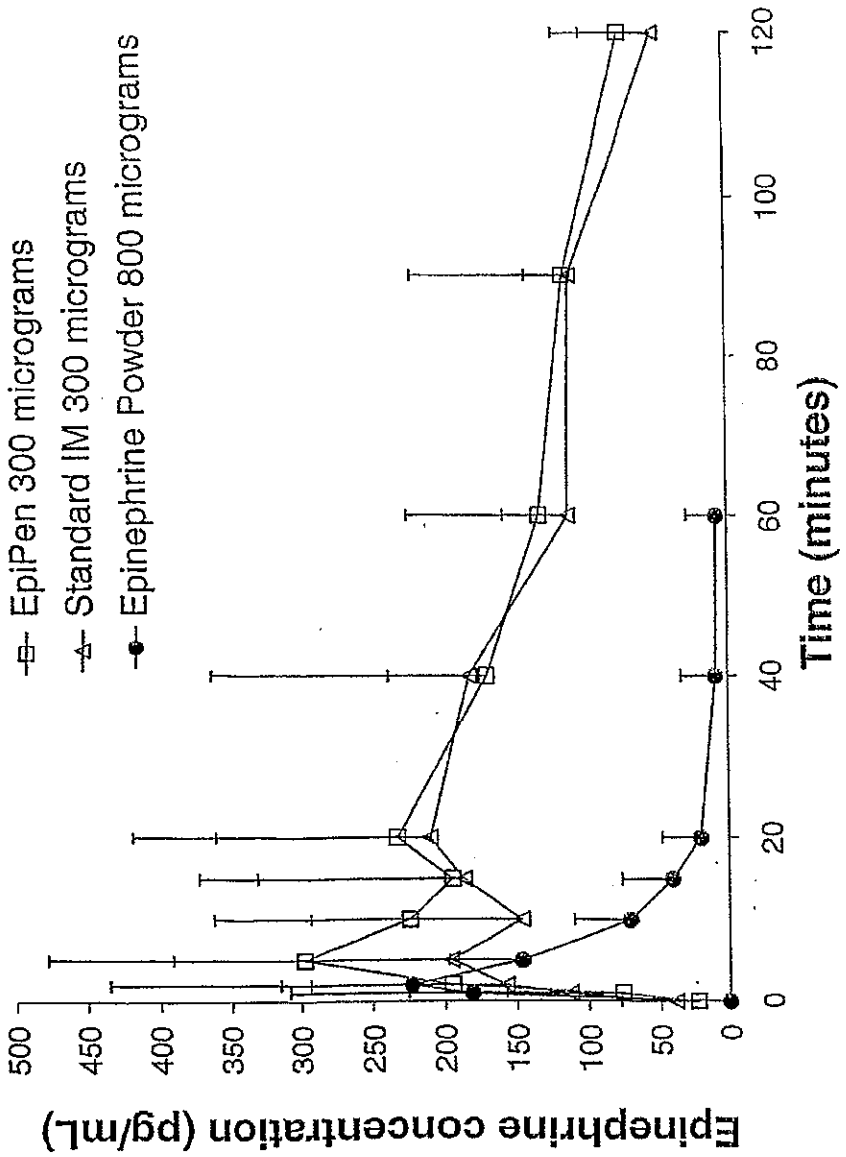

EpiPen 300 micrograms
Standard IM 300 micrograms
Epinephrine Powder 800 micrograms
Epinephrine concentration (pg/mL)
Time (minutes)
0
50
100
150
200
250
300
350
400
450
500
0
20
40
60
80
100
120

Figure 9

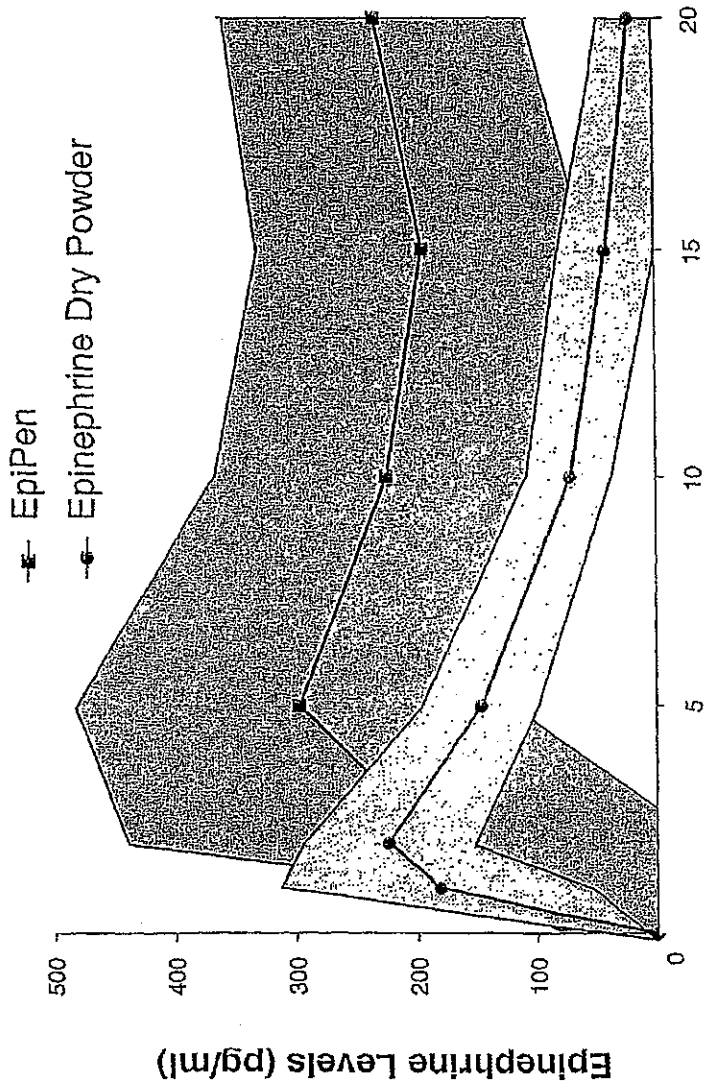

EpiPen
Epinephrine Dry Powder
Epinephrine Levels (pg/ml)
500
400
300
200
100
0
5
10
15
20
Time (min)

Figure 10

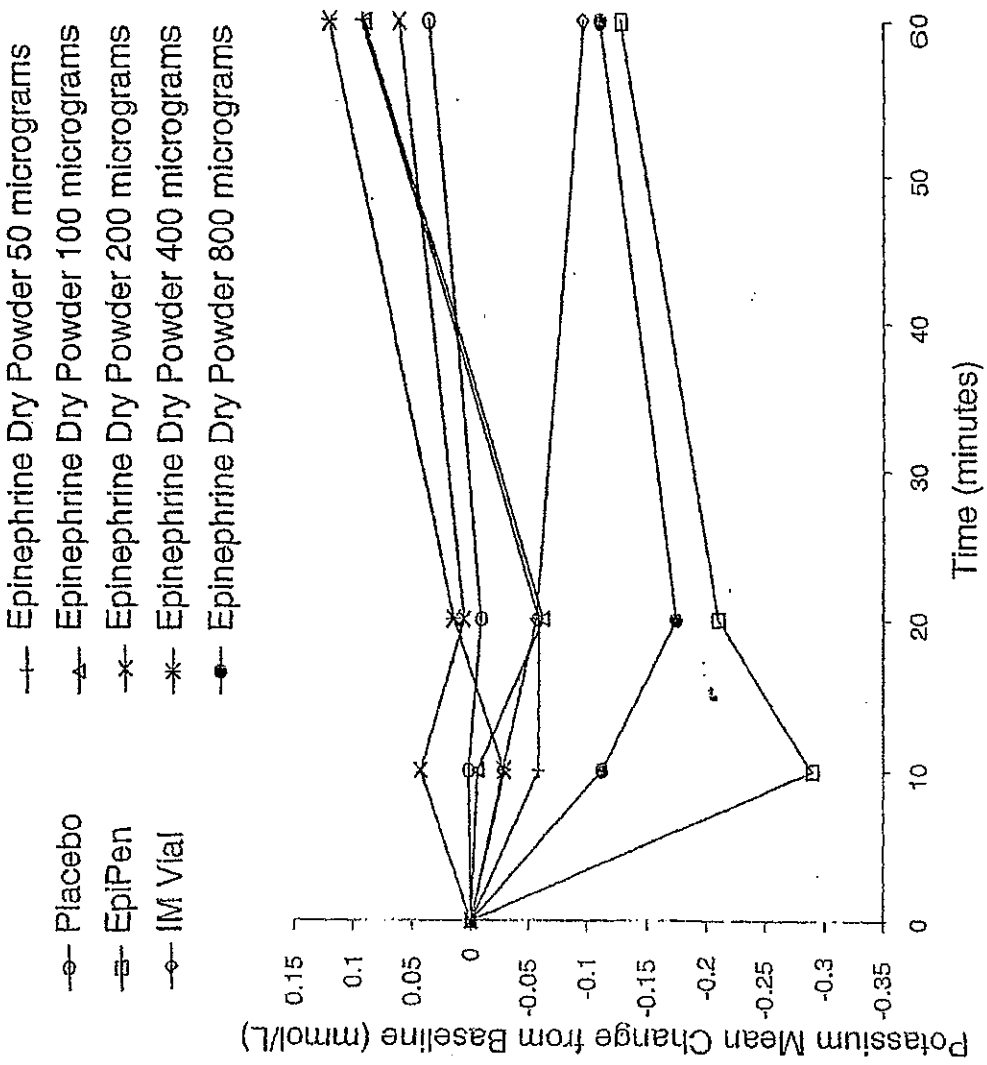

Epinephrine Dry Powder 50 micrograms
Placebo
Epinephrine Dry Powder 100 micrograms
EpiPen
Epinephrine Dry Powder 200 micrograms
IM Vial
Epinephrine Dry Powder 400 micrograms
Epinephrine Dry Powder 800 micrograms
Potassium Mean Change from Baseline (mmol/L)
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
-0.35
0
10
20
30
40
50
60
Time (minutes)

Figure 11

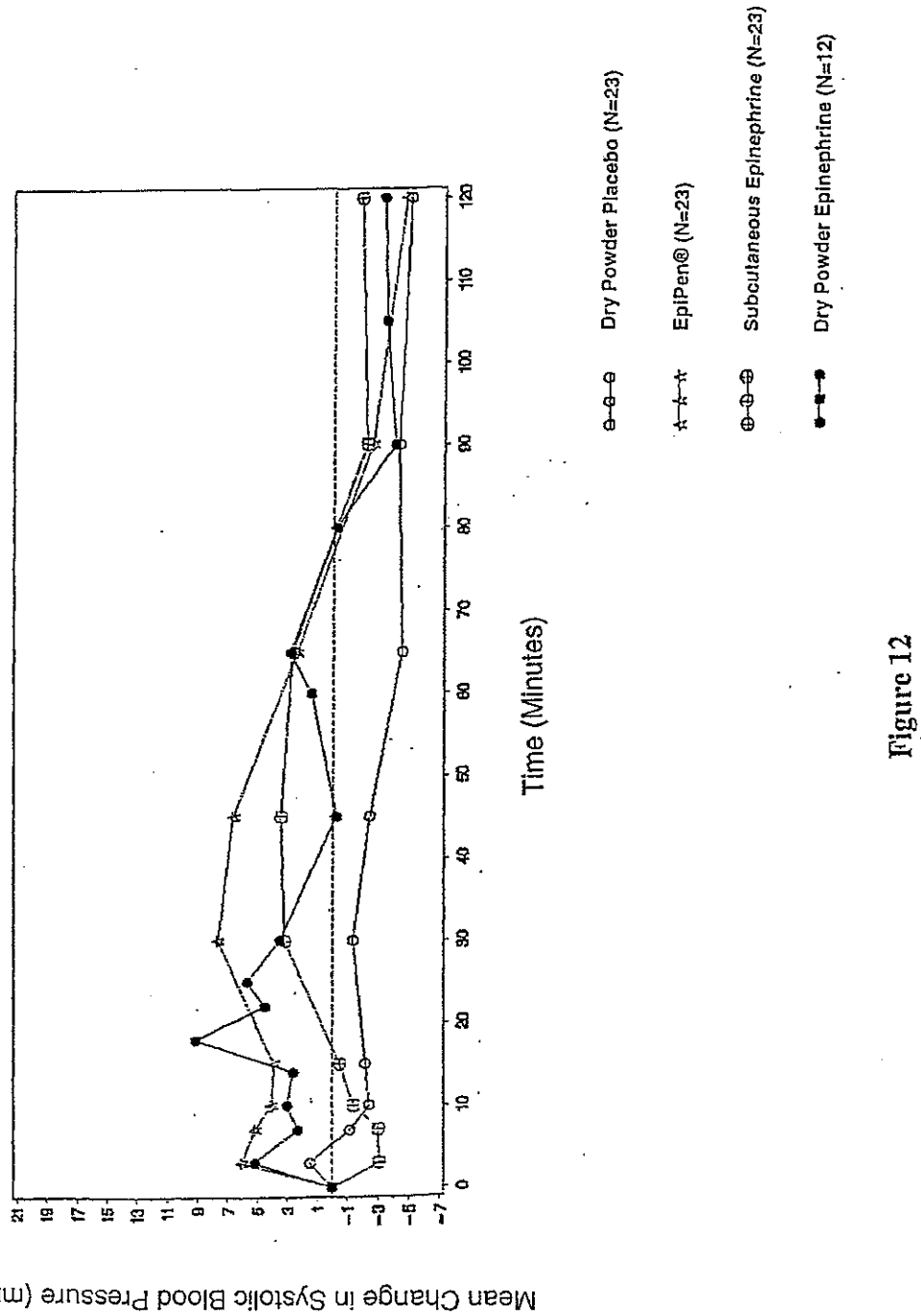

Mean Change in Systolic Blood Pressure (mm Hg)
Time (Minutes)
Dry Powder Placebo (N=23)
EpiPen® (N=23)
Subcutaneous Epinephrine (N=23)
Dry Powder Epinephrine (N=12)

Figure 12

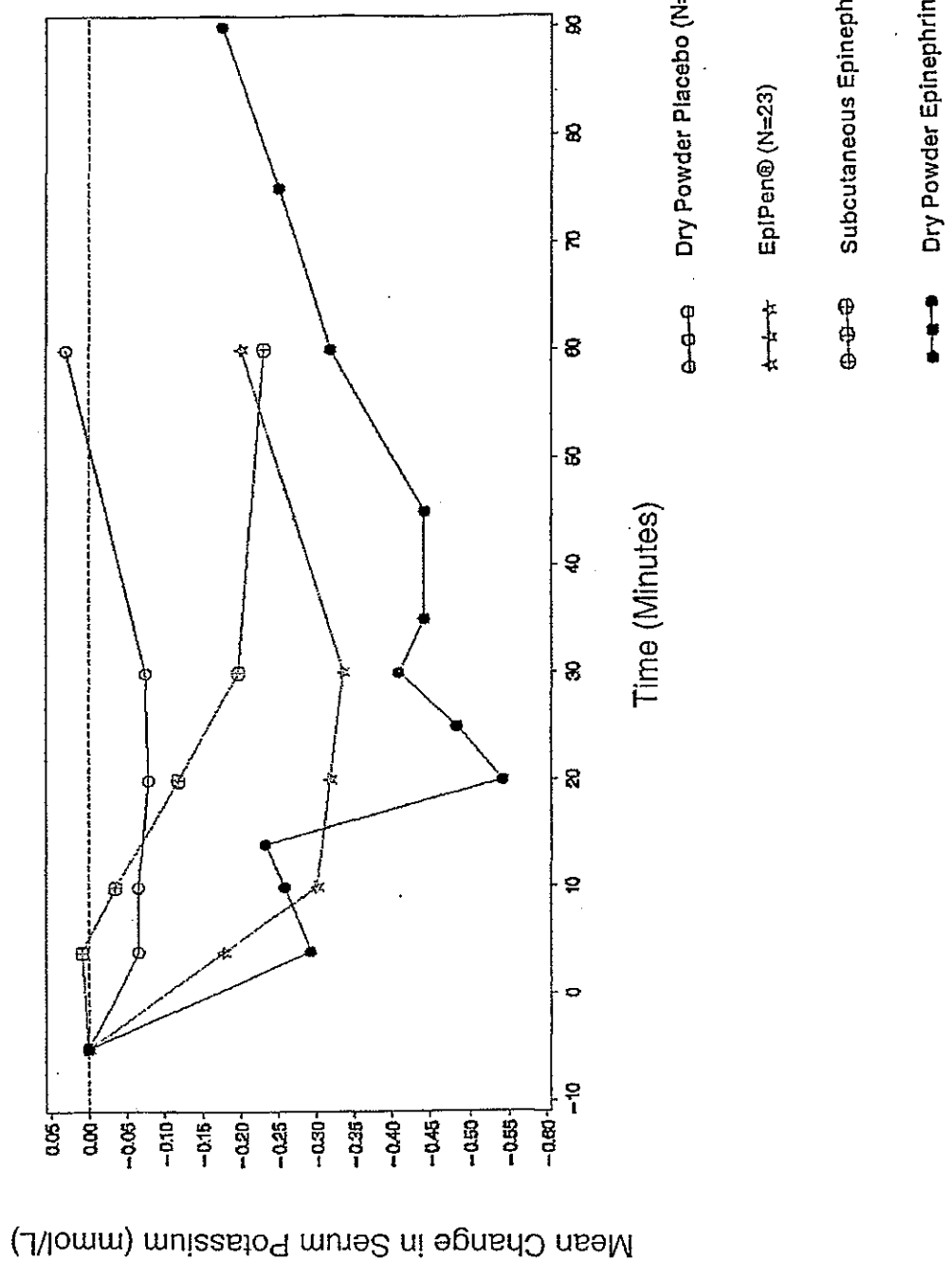

Mean Change in Serum Potassium (mmol/L)
0.05
0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-10
0
10
20
30
40
50
60
70
80
90
Time (Minutes)
Dry Powder Placebo (N=23)
EpiPen® (N=23)
Subcutaneous Epinephrine (N=23)
Dry Powder Epinephrine (N=12)

Figure 13

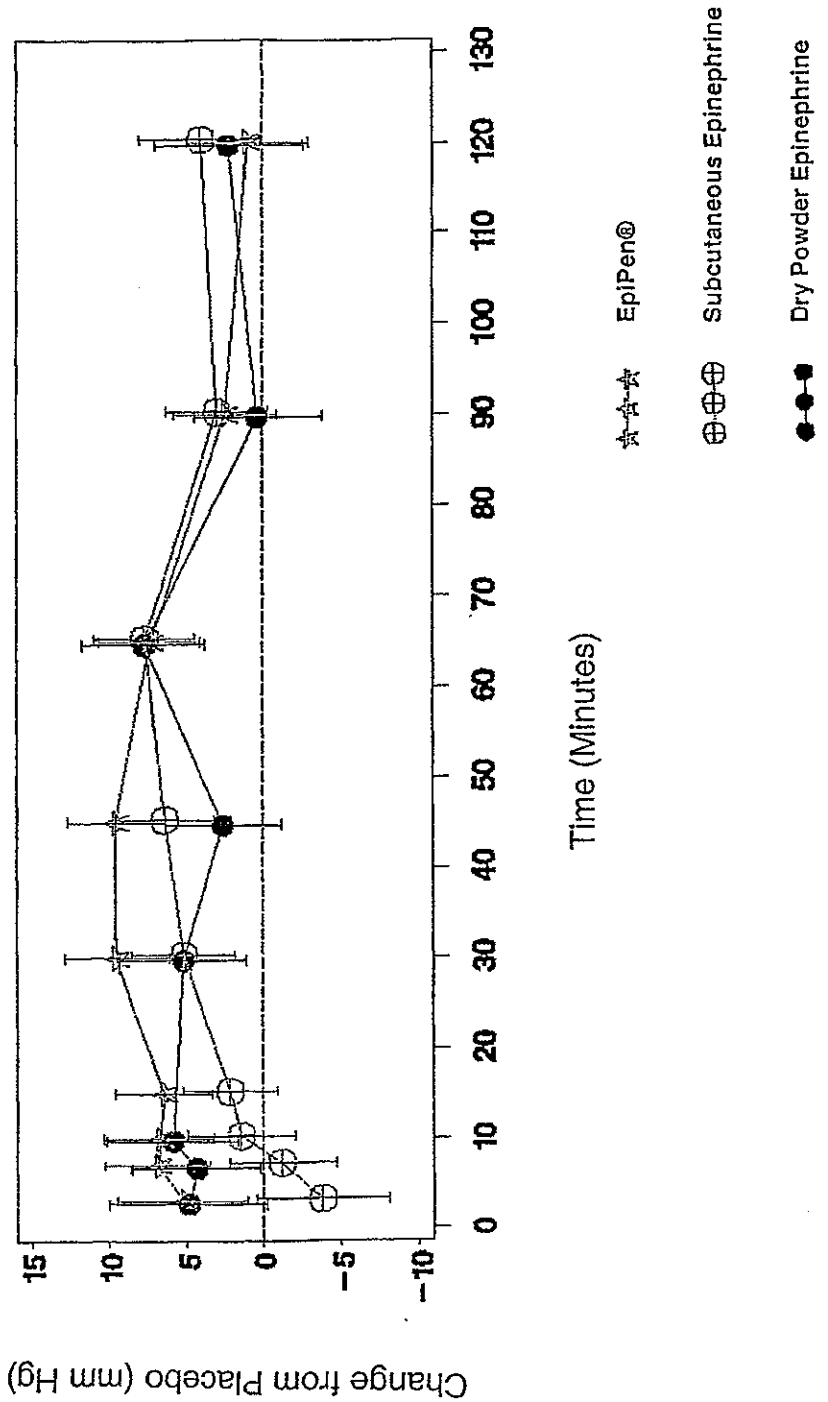

Change from Placebo (mm Hg)
15
10
5
0
−5
−10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
Time (Minutes)
EpiPen®
Subcutaneous Epinephrine
Dry Powder Epinephrine

Figure 14

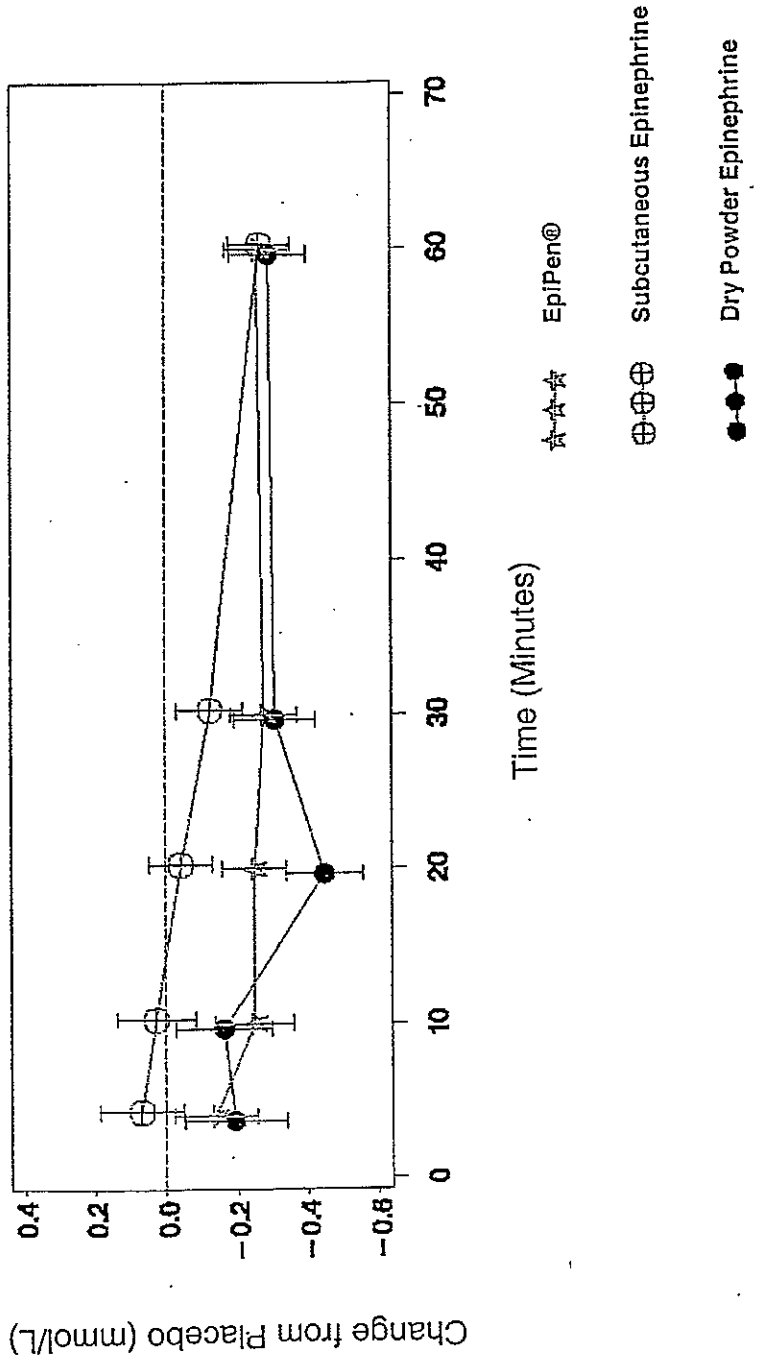

Change from Placebo (mmol/L)
0.4
0.2
0.0
−0.2
−0.4
−0.8
0
10
20
30
40
50
60
70
Time (Minutes)
EpiPen®
Subcutaneous Epinephrine
Dry Powder Epinephrine

Figure 15