Figure 1

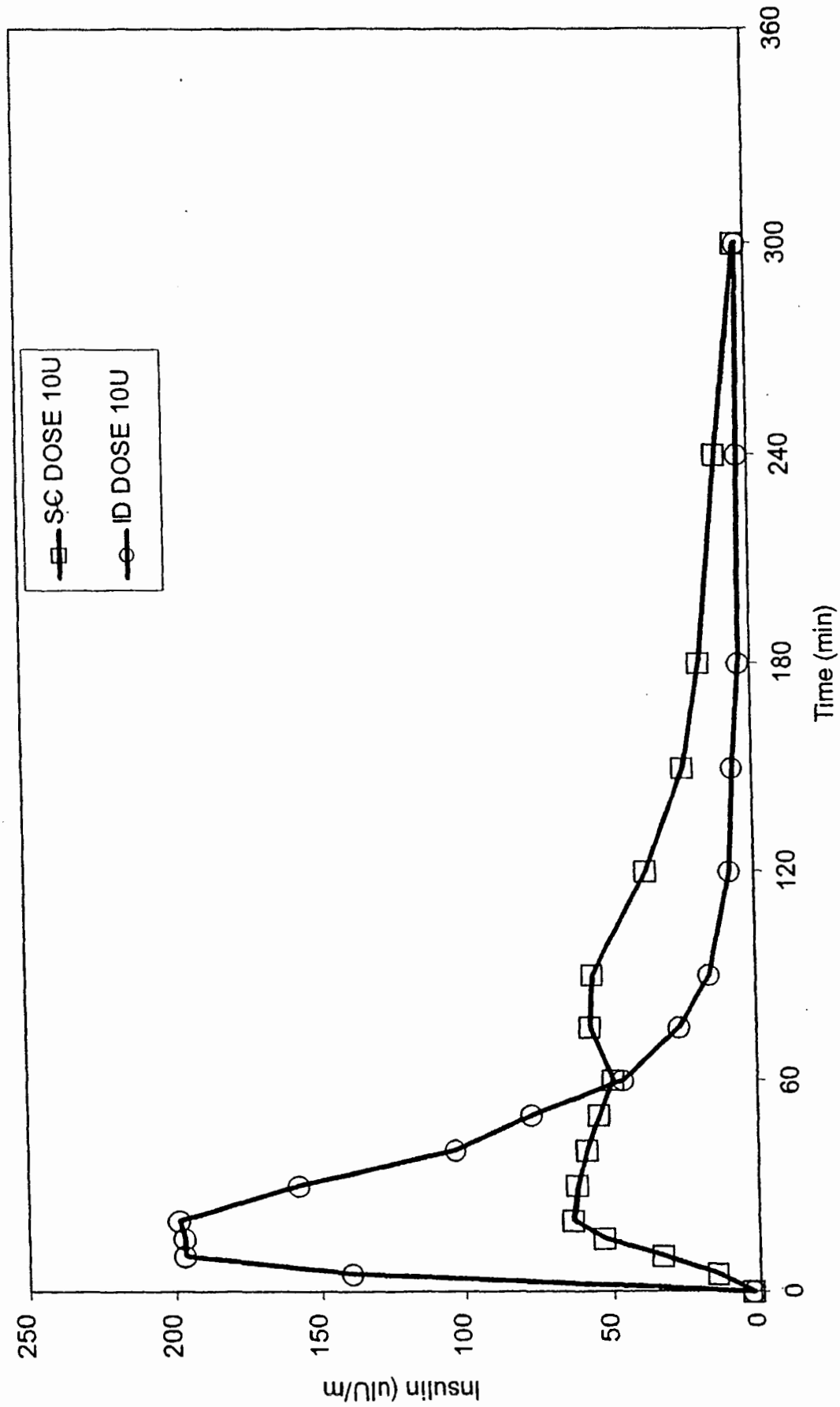

SC DOSE 10U
ID DOSE 10U
Insulin (uU/m
250
200
150
100
50
0
0
60
120
180
240
300
360
Time (min)

Figure 2

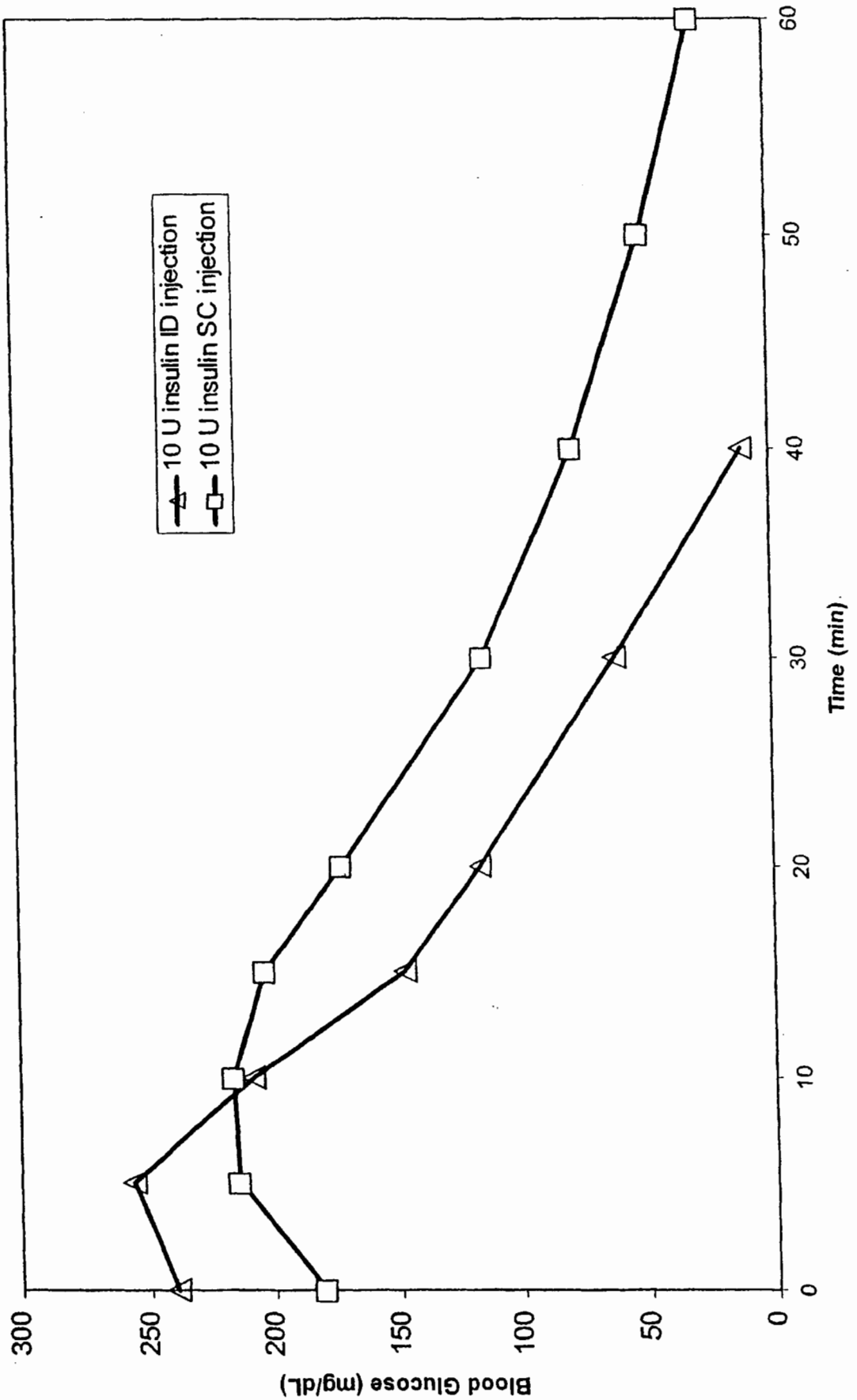

10 U insulin ID injection
10 U insulin SC injection
Blood Glucose (mg/dL)
300
250
200
150
100
50
0
Time (min)
0
10
20
30
40
50
60

Figure 3

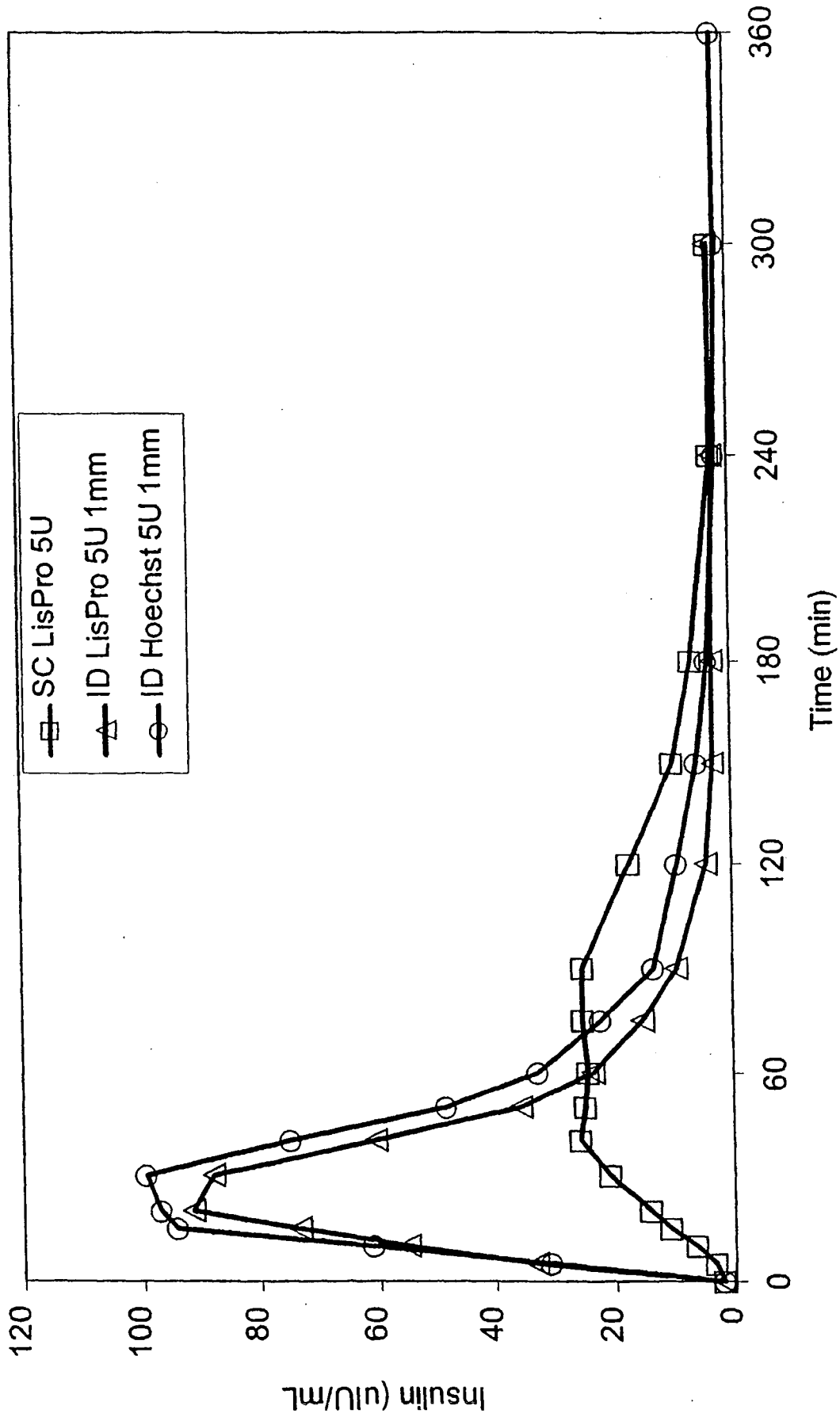

SC LisPro 5U
ID LisPro 5U 1mm
ID Hoechst 5U 1mm
Insulin (uU/mL
120
100
80
60
40
20
0
0
60
120
180
240
300
360
Time (min)

Figure 4

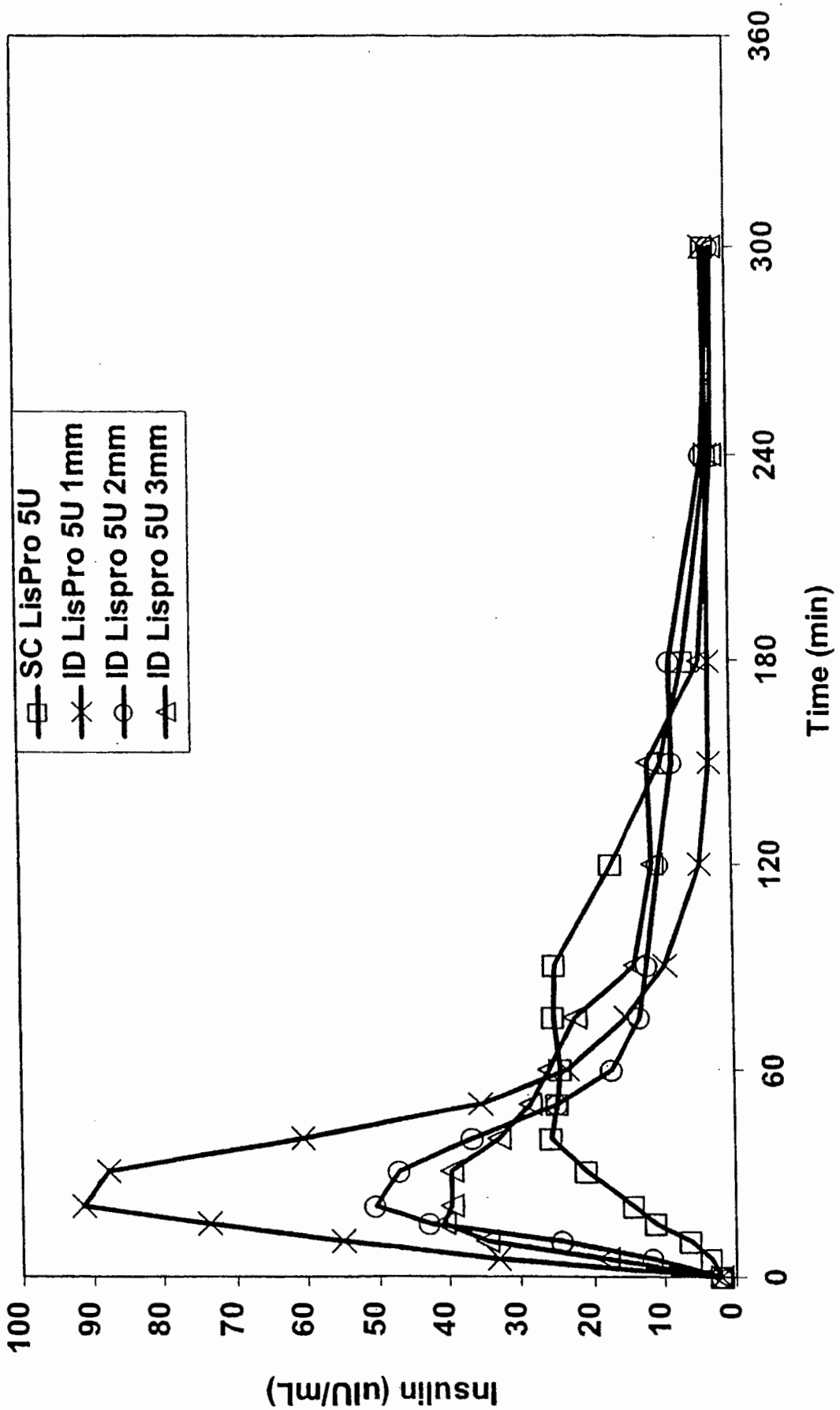

SC LisPro 5U
ID LisPro 5U 1mm
ID Lispro 5U 2mm
ID Lispro 5U 3mm
Insulin (uIU/mL)
0
10
20
30
40
50
60
70
80
90
100
Time (min)
0
60
120
180
240
300
360

Figure 5

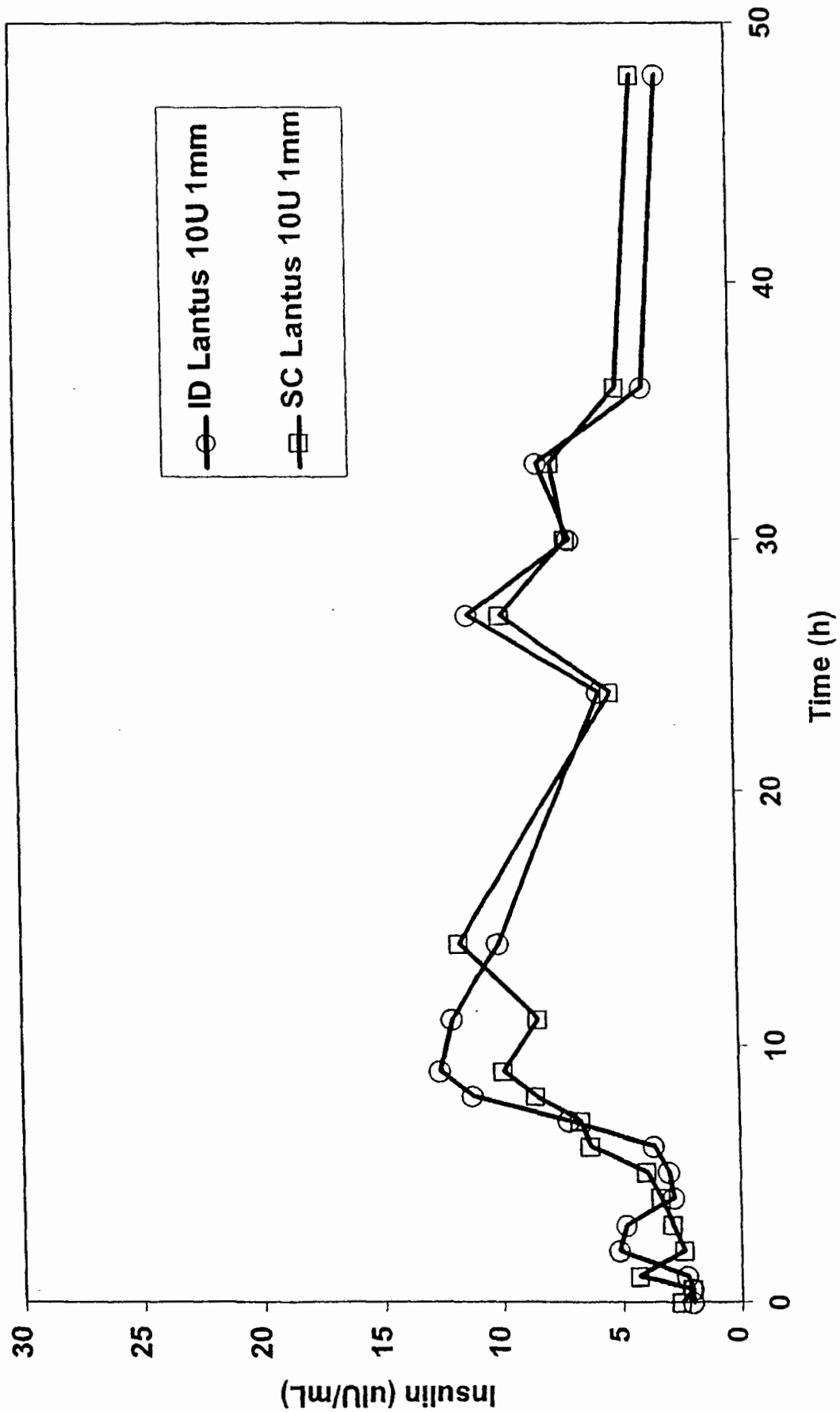

ID Lantus 10U 1mm
SC Lantus 10U 1mm
Insulin (uU/mL)
Time (h)
0
5
10
15
20
25
30
0
10
20
30
40
50

Figure 6

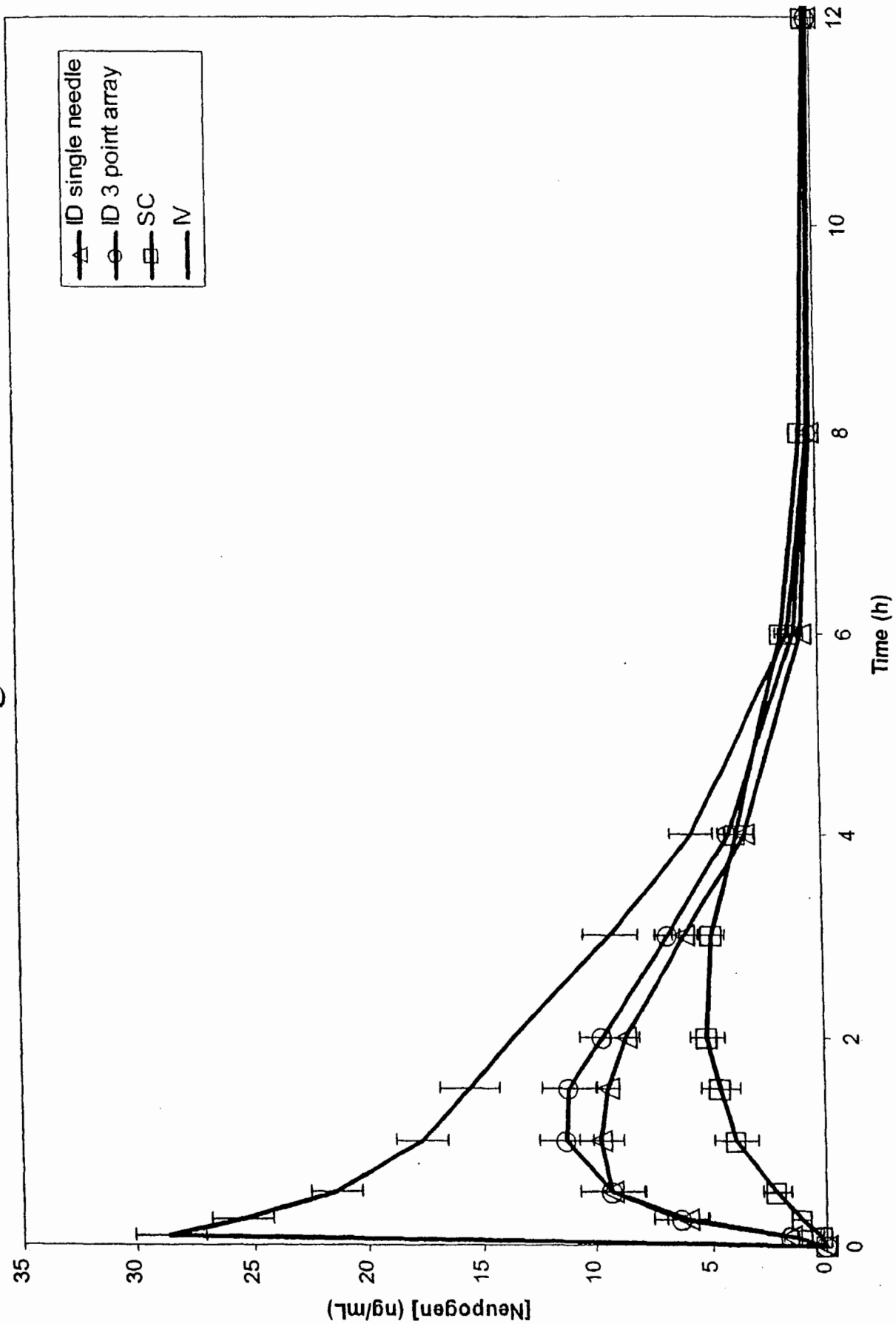

ID single needle
ID 3 point array
SC
IV
[Neupogen] (ng/mL)
Time (h)
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12

Figure 7

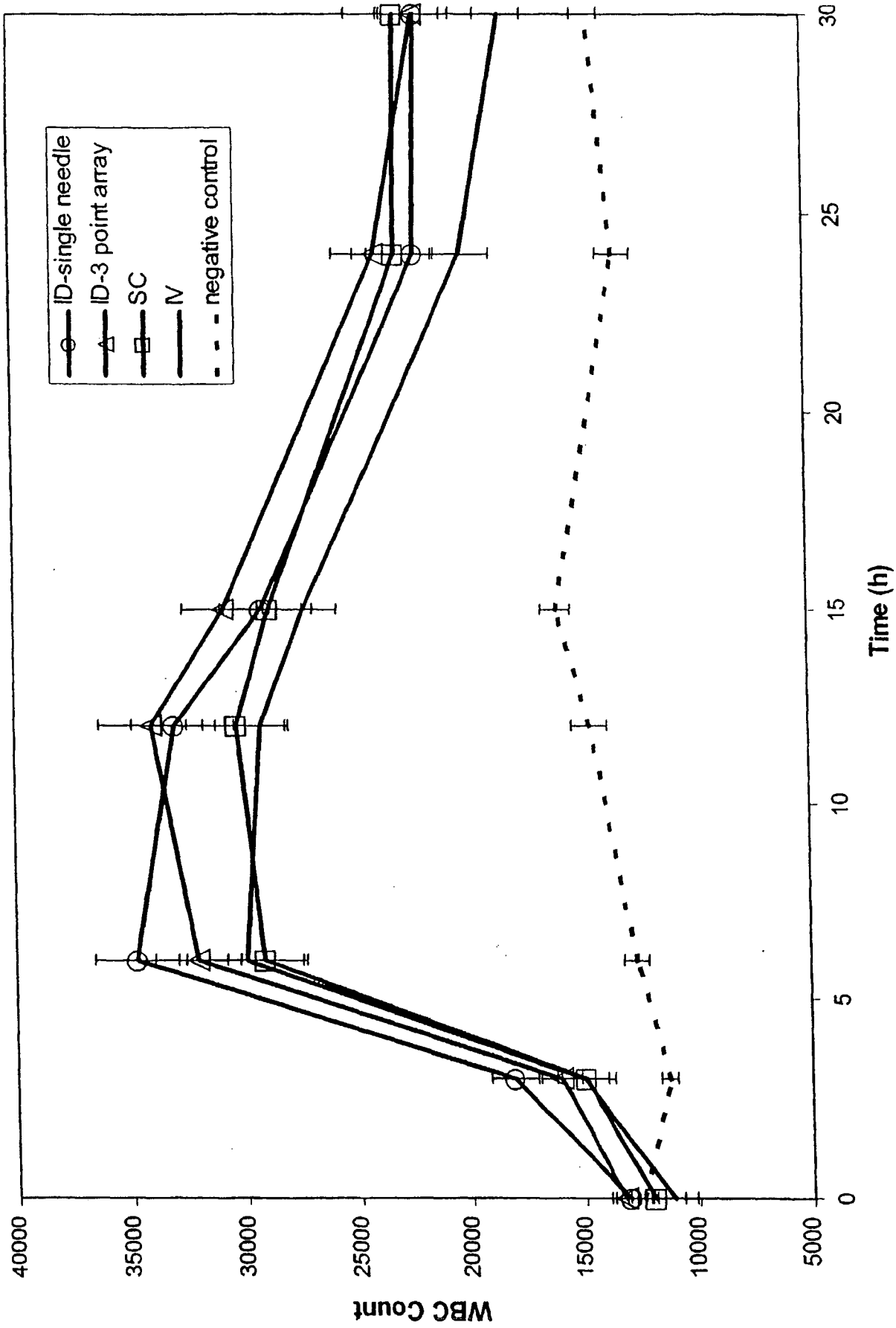

ID-single needle
ID-3 point array
SC
IV
negative control
WBC Count
40000
35000
30000
25000
20000
15000
10000
5000
0
5
10
15
20
25
30
Time (h)

Figure 8

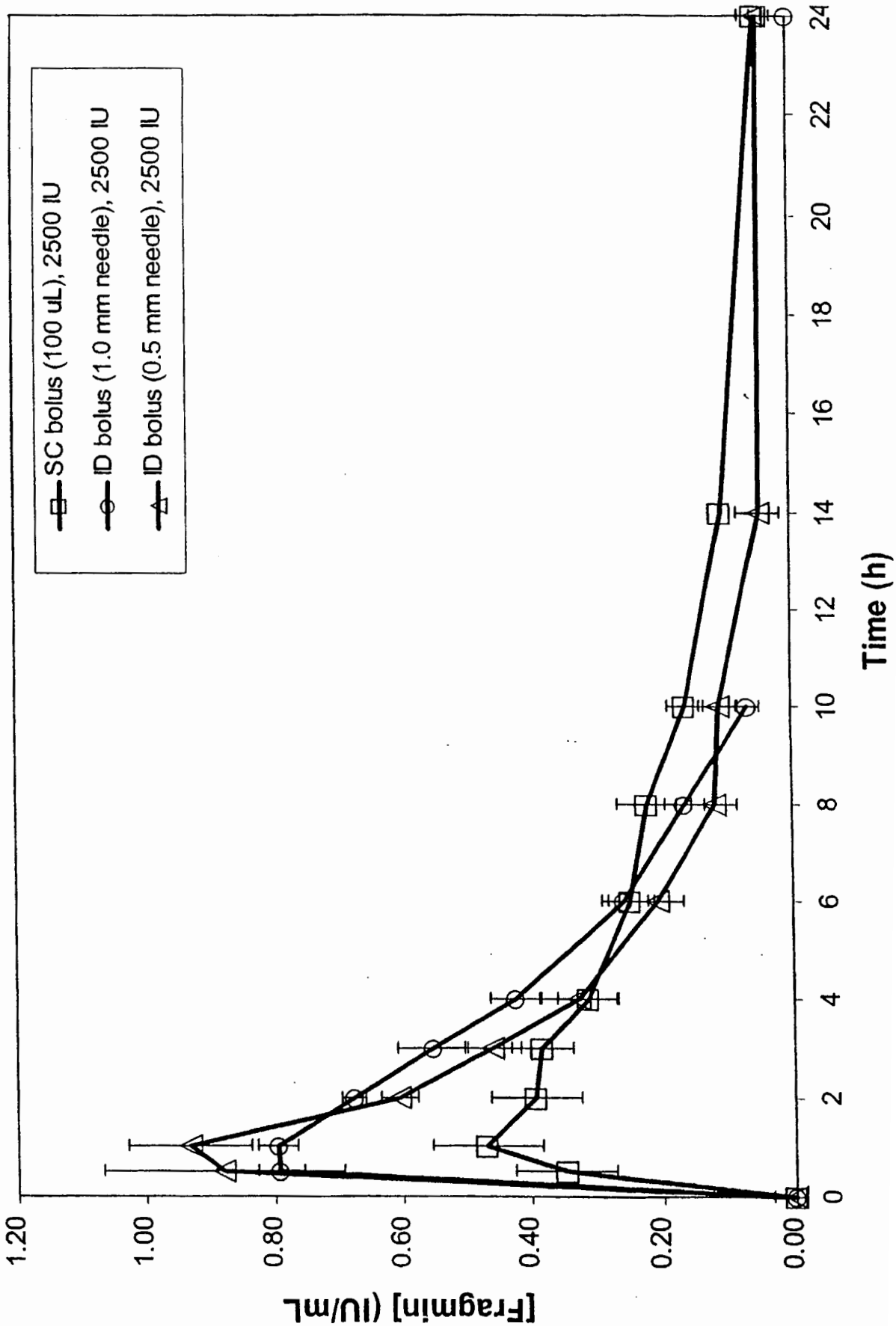

SC bolus (100 uL), 2500 IU
ID bolus (1.0 mm needle), 2500 IU
ID bolus (0.5 mm needle), 2500 IU
[Fragmin] (IU/mL
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0
2
4
6
8
10
12
14
16
18
20
22
24
Time (h)

Figure 9

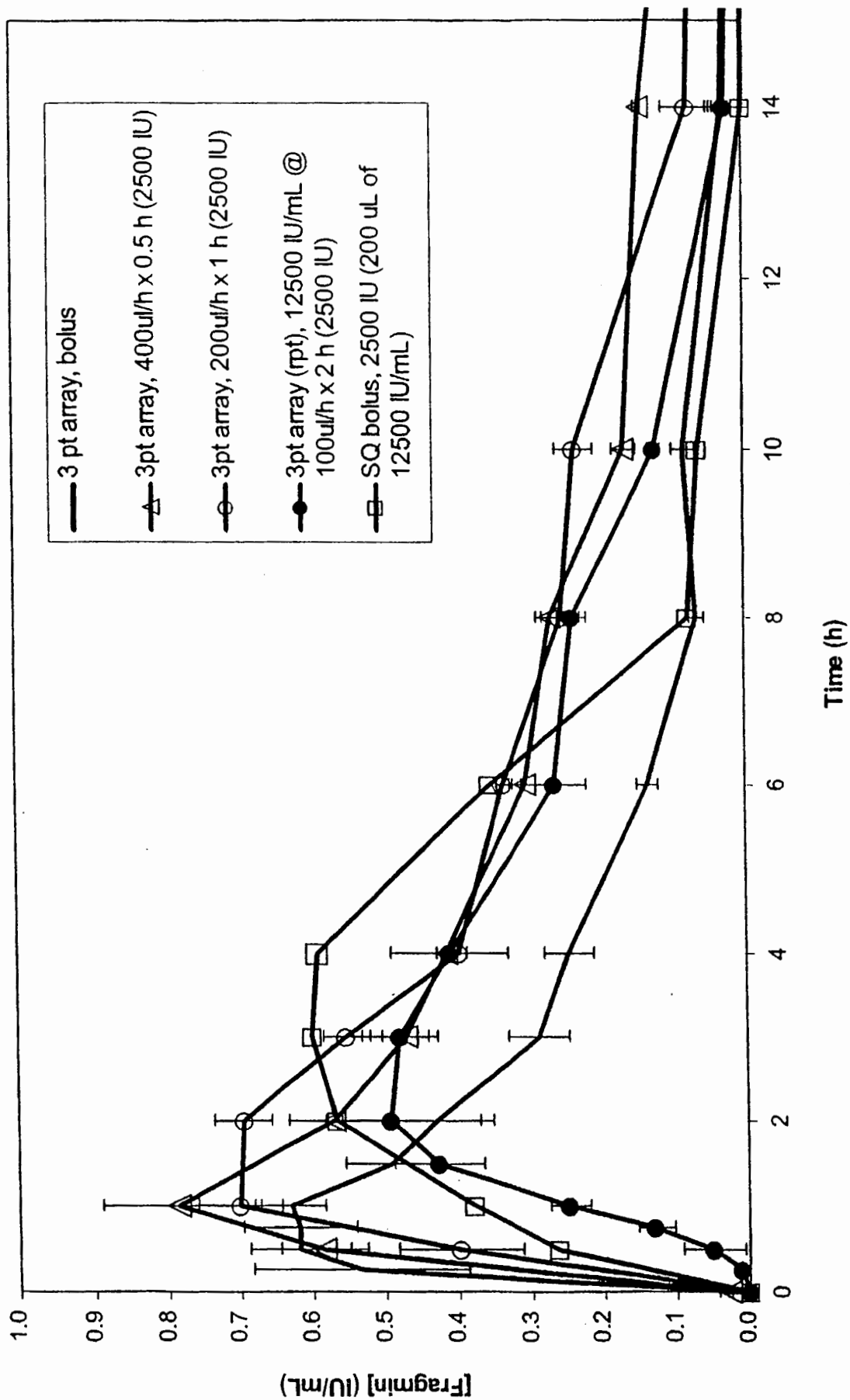

3 pt array, bolus
3pt array, 400ul/h x 0.5 h (2500 IU)
3pt array, 200ul/h x 1 h (2500 IU)
3pt array (rpt), 12500 IU/mL @ 100ul/h x 2 h (2500 IU)
SQ bolus, 2500 IU (200 uL of 12500 IU/mL)
[Fragmin] (IU/mL)
Time (h)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
2
4
6
8
10
12
14

Figure 10

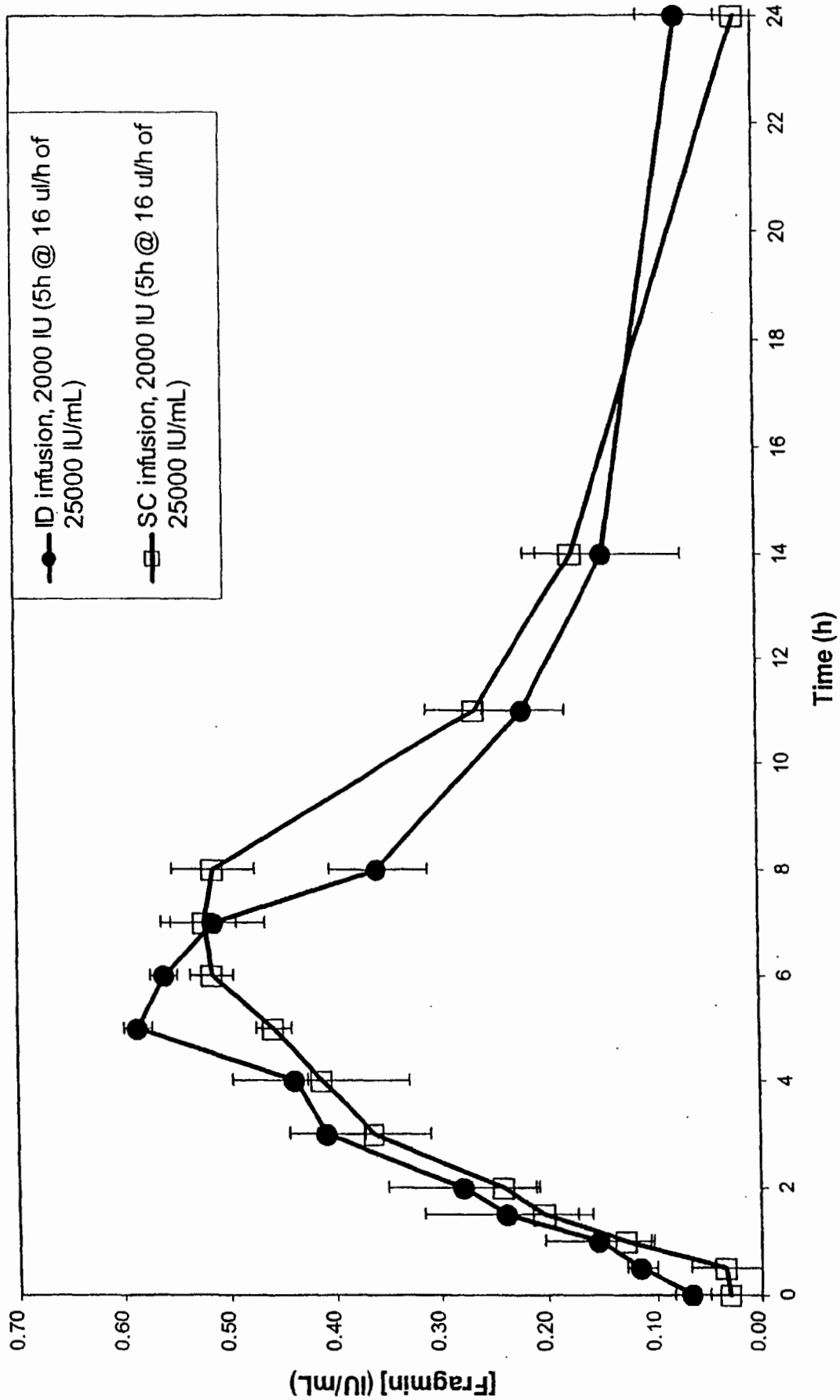
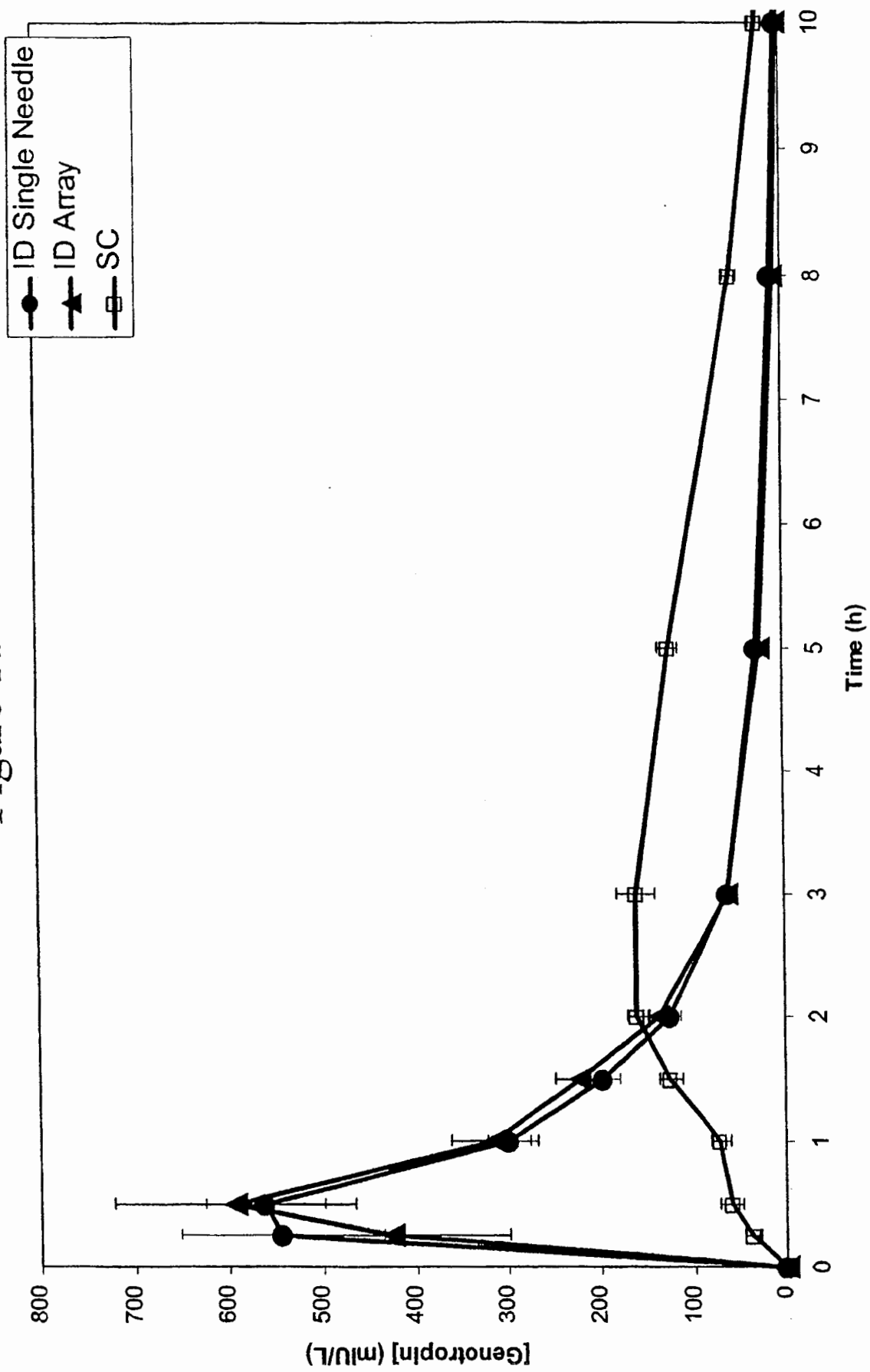

ID infusion, 2000 IU (5h @ 16 ul/h of 25000 IU/mL)
SC infusion, 2000 IU (5h @ 16 ul/h of 25000 IU/mL)
[Fragmin] (IU/mL)
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
Time (h)
0
2
4
6
8
10
12
14
16
18
20
22
24

Figure 11


ID Single Needle
ID Array
SC
[Genotropin] (mIU/L)
800
700
600
500
400
300
200
100
0
Time (h)
0
1
2
3
4
5
6
7
8
9
10