FIG. 1

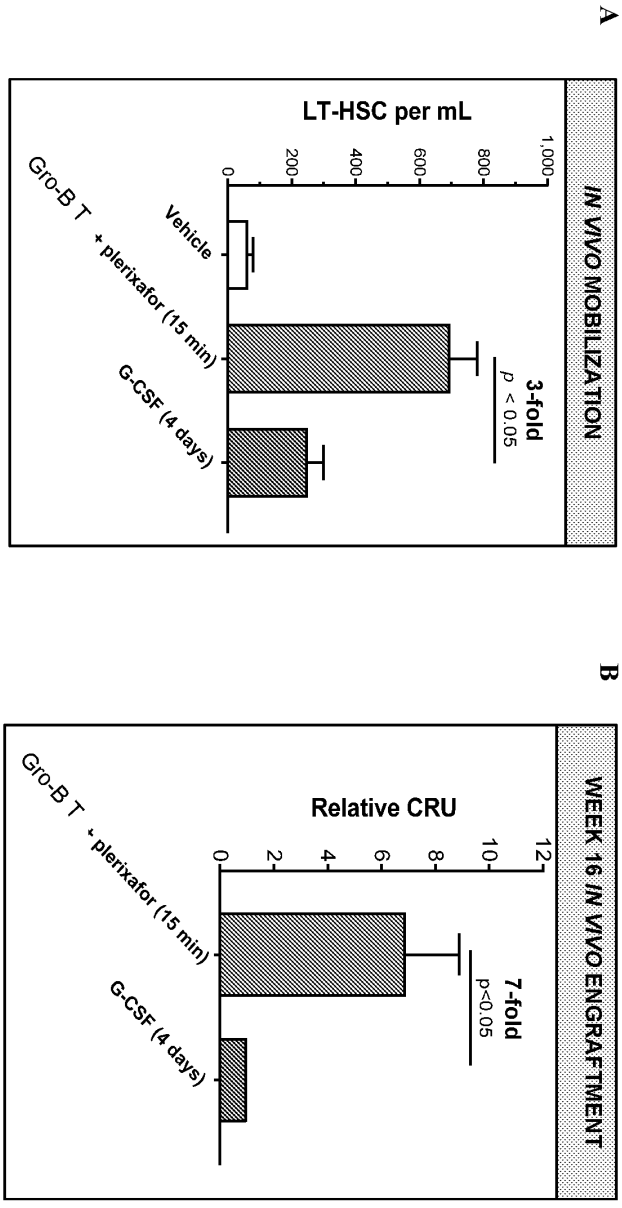

A
IN VIVO MOBILIZATION
LT-HSC per mL
1,000
800
600
400
200
0
Vehicle
Gro-β T + plerixafor (15 min)
G-CSF (4 days)
3-fold
p < 0.05
B
WEEK 16 IN VIVO ENGRAFTMENT
Relative CRU
12
10
8
6
4
2
0
Gro-β T + plerixafor (15 min)
G-CSF (4 days)
7-fold
p<0.05

FIG. 2A

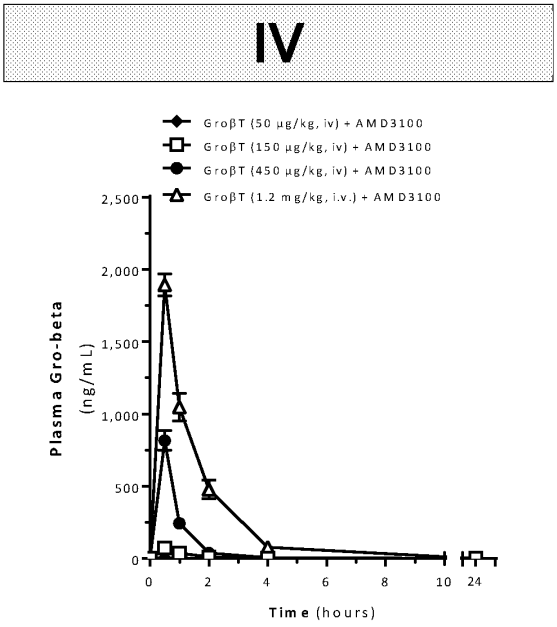

IV
GroβT (50 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (1.2 mg/kg, i.v.) + AMD3100
Plasma Gro-beta (ng/mL)
2,500
2,000
1,500
1,000
500
0
0 2 4 6 8 10 24
Time (hours)

FIG. 2B

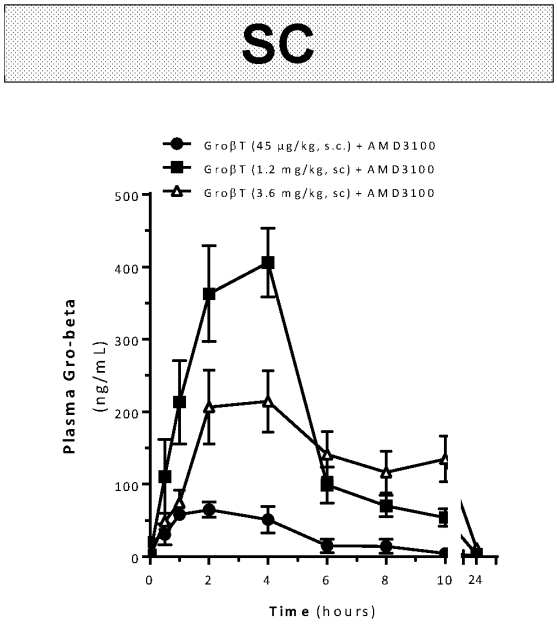

SC
GroβT (45 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Plasma Gro-beta (ng/mL)
500
400
300
200
100
0
0 2 4 6 8 10 24
Time (hours)

FIG. 3A

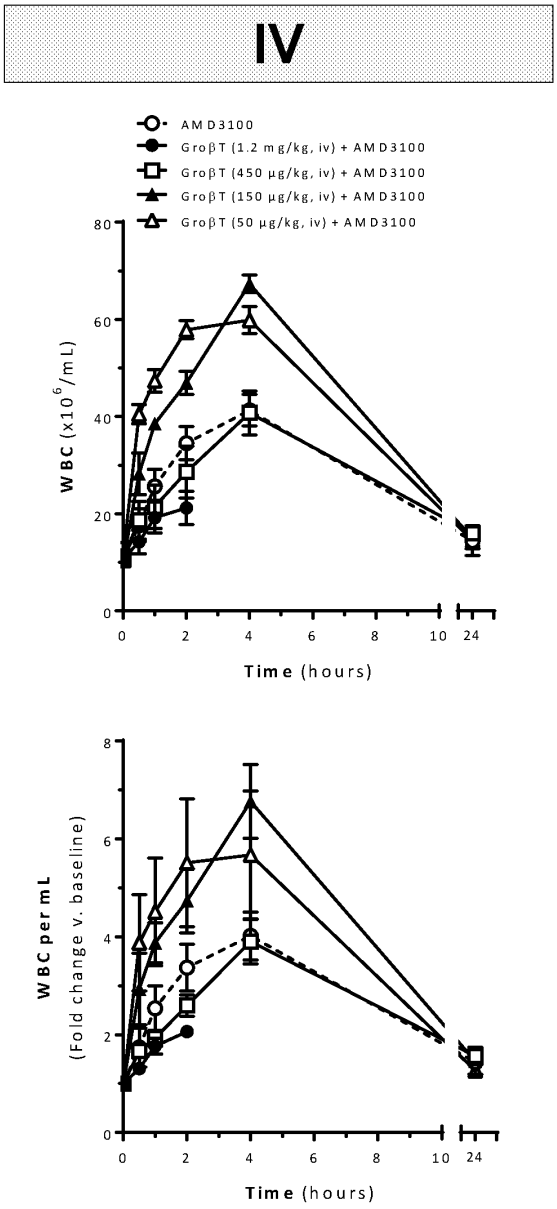

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
WBC (x10^6/mL)
Time (hours)
WBC per mL
(Fold change v. baseline)
Time (hours)

FIG. 3B

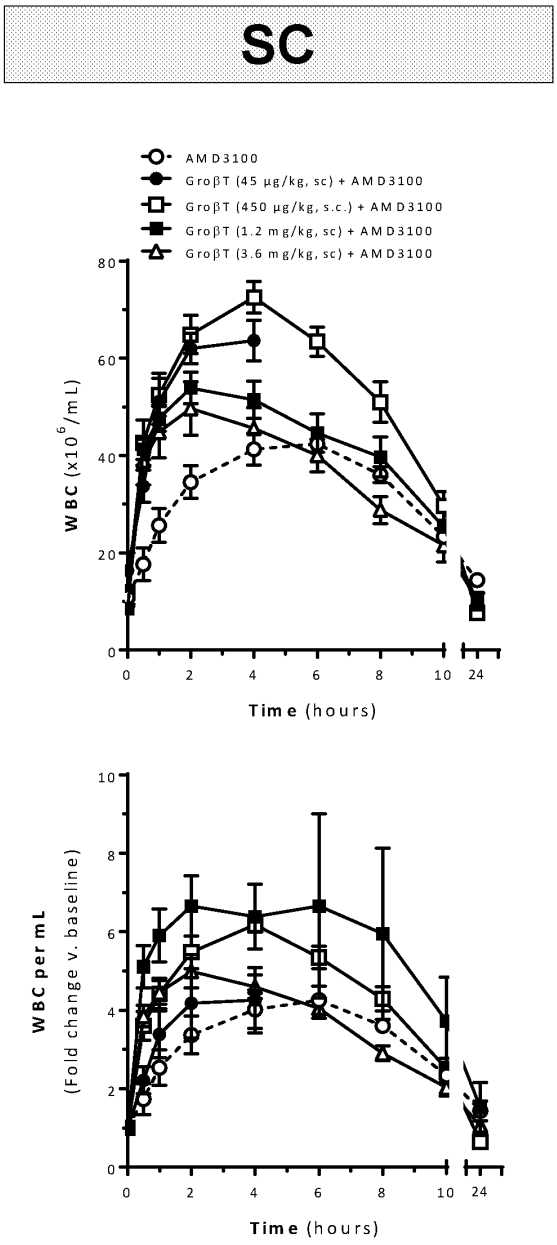

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
WBC (x10^6/mL)
Time (hours)
WBC per mL
(Fold change v. baseline)
Time (hours)

FIG. 4A

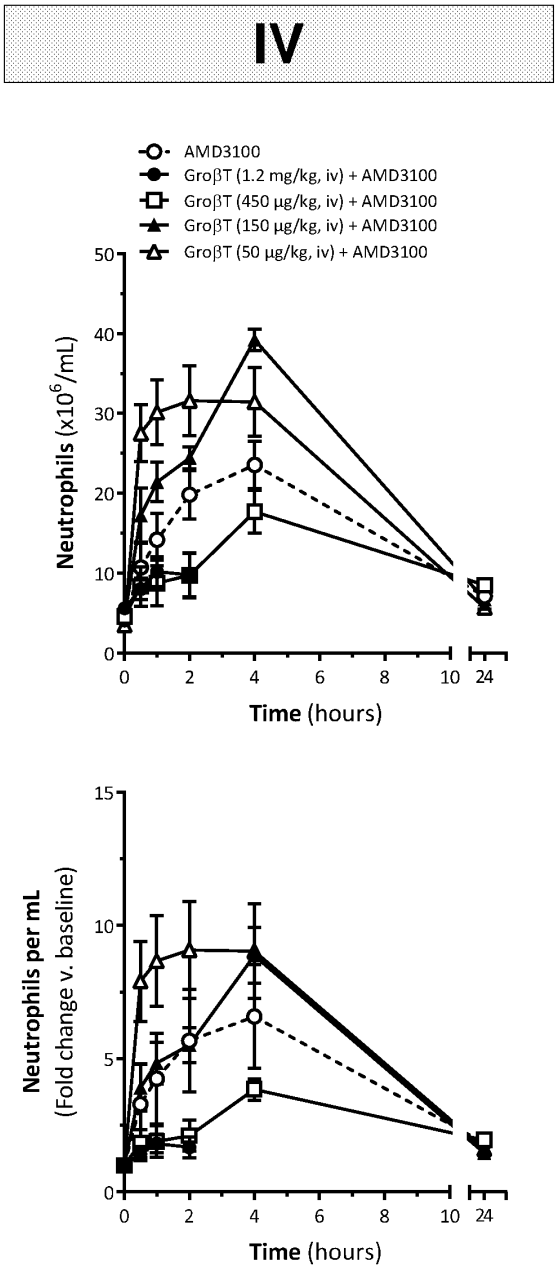

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Neutrophils (x10^6/mL)
0
10
20
30
40
50
0
2
4
6
8
10
24
Time (hours)
Neutrophils per mL
(Fold change v. baseline)
0
5
10
15
0
2
4
6
8
10
24
Time (hours)

FIG. 4B

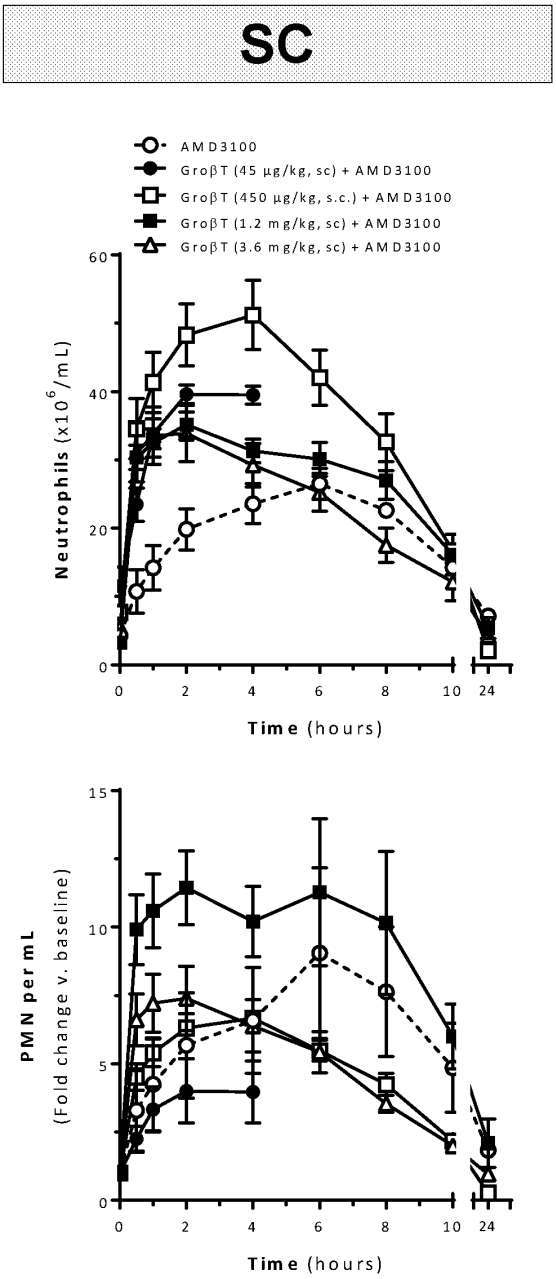

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Neutrophils (x10^6/mL)
Time (hours)
PMN per mL
(Fold change v. baseline)
Time (hours)

FIG. 5A

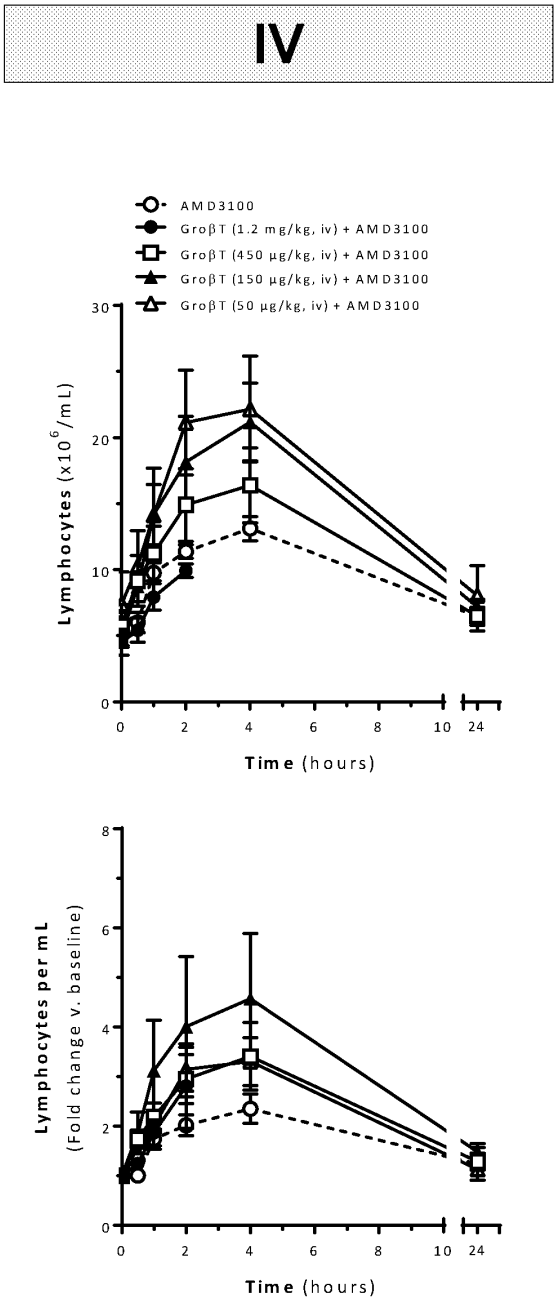

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Lymphocytes (x10^6/mL)
Time (hours)
Lymphocytes per mL
(Fold change v. baseline)
Time (hours)

FIG. 5B

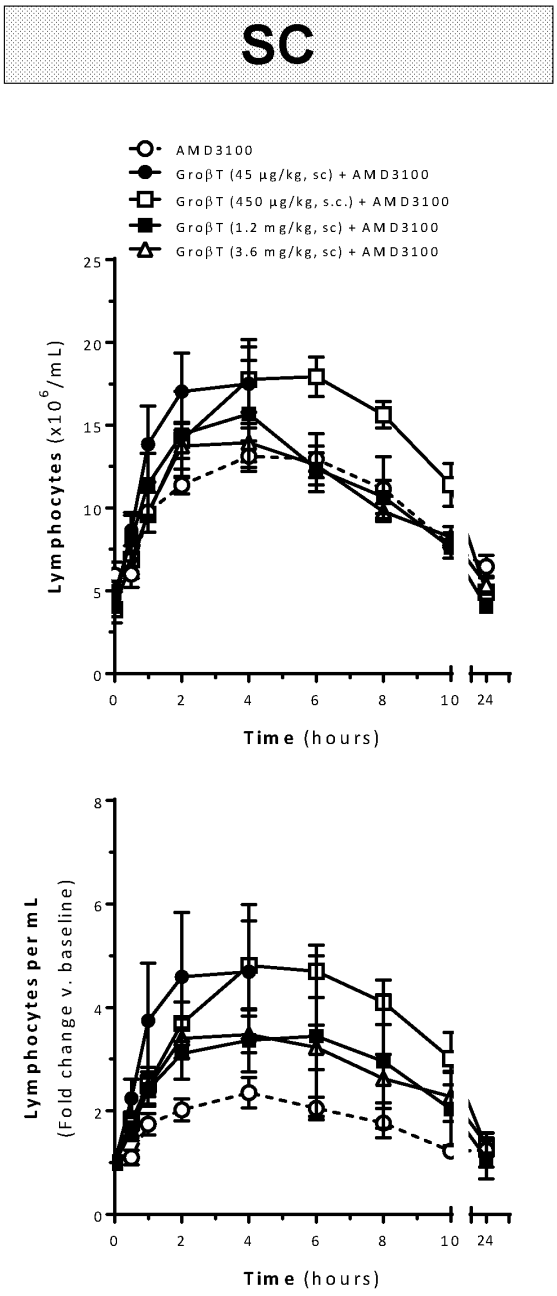

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Lymphocytes (x10^6/mL)
Time (hours)
Lymphocytes per mL
(Fold change v. baseline)
Time (hours)

FIG. 6A

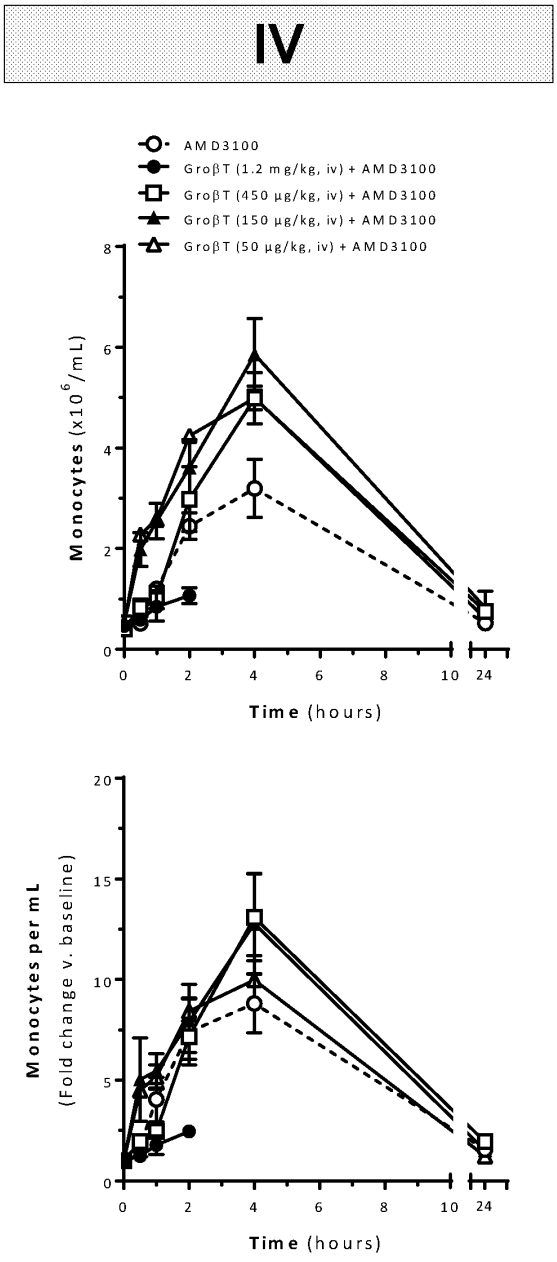

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Monocytes (x10^6/mL)
Time (hours)
Monocytes per mL
(Fold change v. baseline)
Time (hours)

FIG. 6B

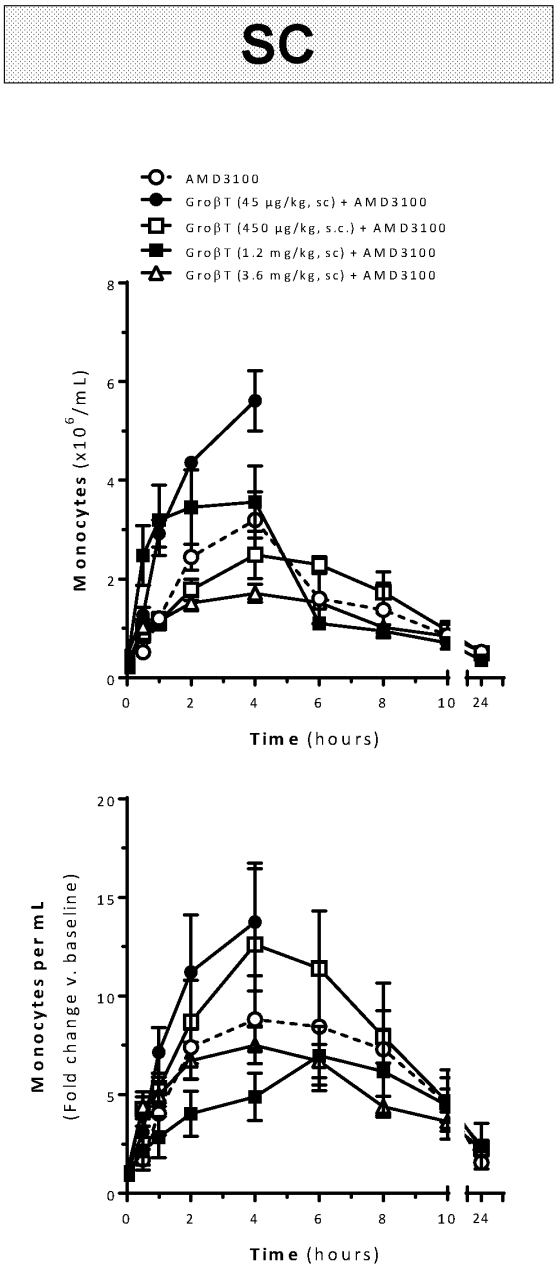

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Monocytes (x10^6/mL)
Time (hours)
Monocytes per mL
(Fold change v. baseline)
Time (hours)

FIG. 7A

IV

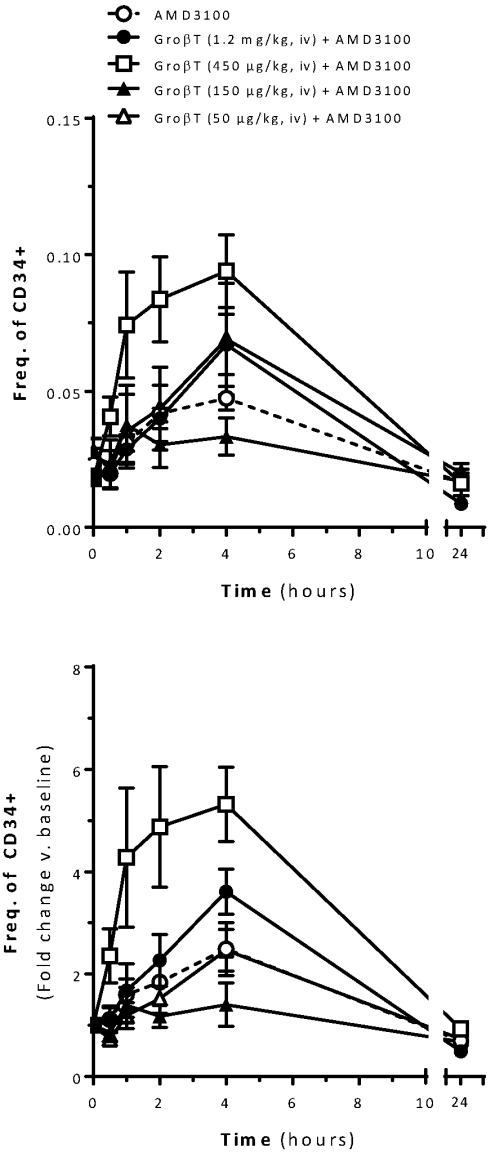

AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Freq. of CD34+
0.15
0.10
0.05
0.00
0
2
4
6
8
10
24
Time (hours)
Freq. of CD34+
(Fold change v. baseline)
8
6
4
2
0
Time (hours)

FIG. 7B

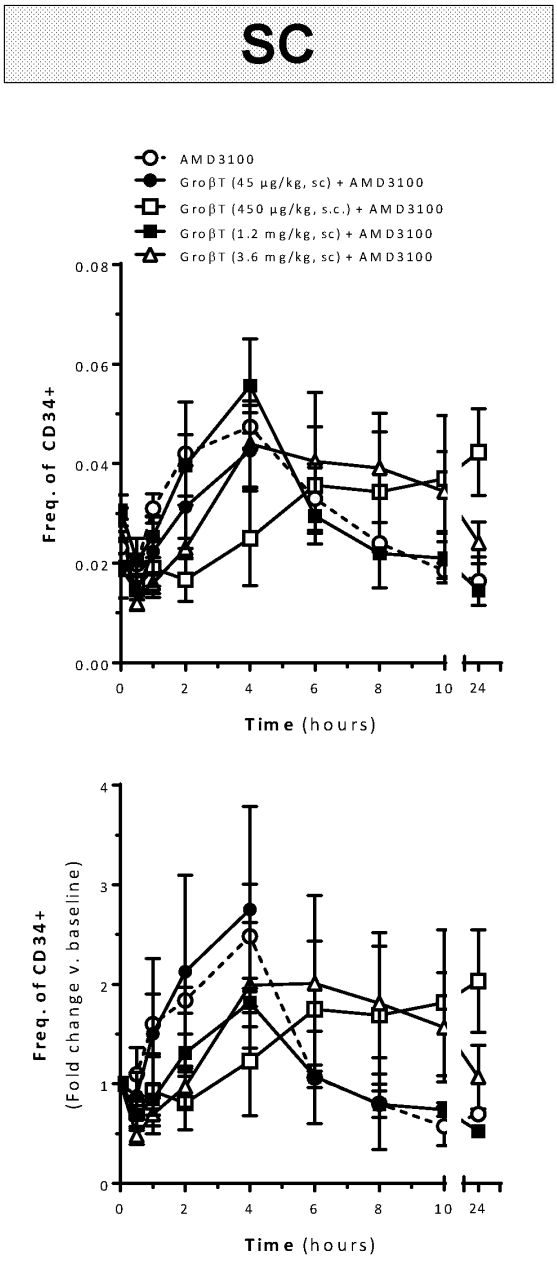

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Freq. of CD34+
0.08
0.06
0.04
0.02
0.00
0
2
4
6
8
10
24
Time (hours)
Freq. of CD34+
(Fold change v. baseline)
4
3
2
1
0
Time (hours)

FIG. 8A

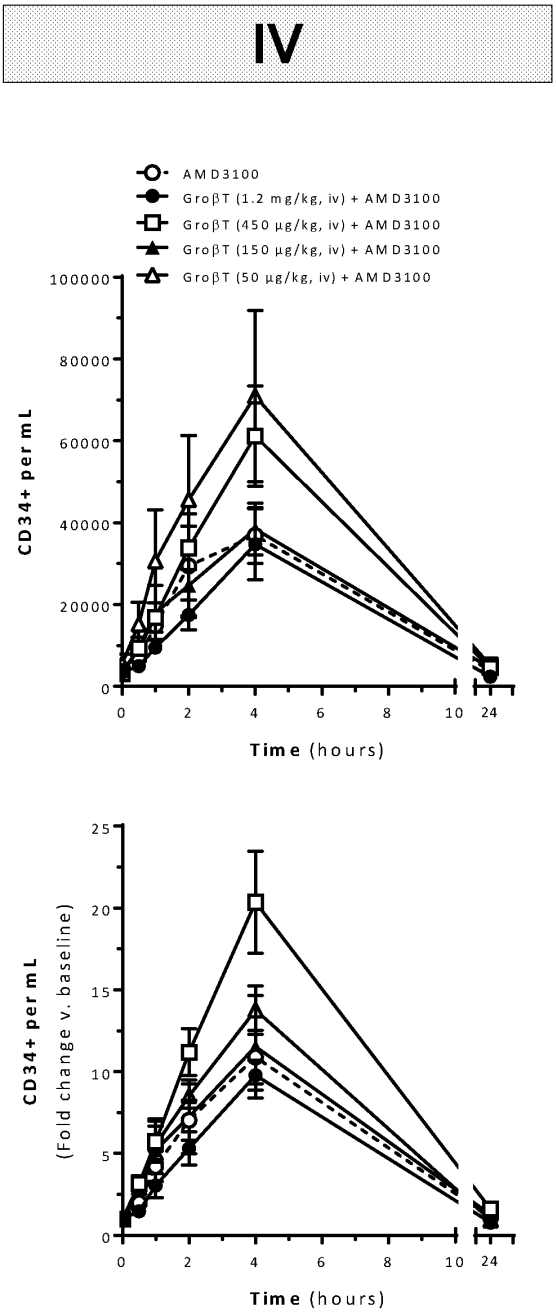

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
CD34+ per mL
100000
80000
60000
40000
20000
0
0
2
4
6
8
10
24
Time (hours)
CD34+ per mL
(Fold change v. baseline)
25
20
15
10
5
0
0
2
4
6
8
10
24
Time (hours)

FIG. 8B

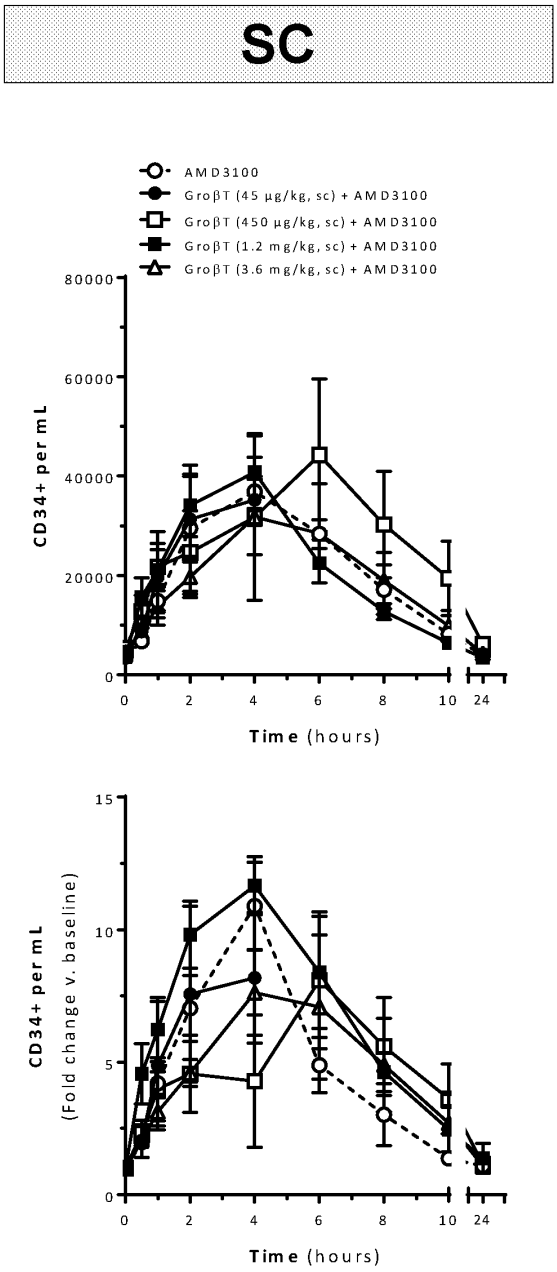

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, sc) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
CD34+ per mL
80000
60000
40000
20000
0
0 2 4 6 8 10 24
Time (hours)
CD34+ per mL
(Fold change v. baseline)
15
10
5
0
0 2 4 6 8 10 24
Time (hours)

FIG. 9A

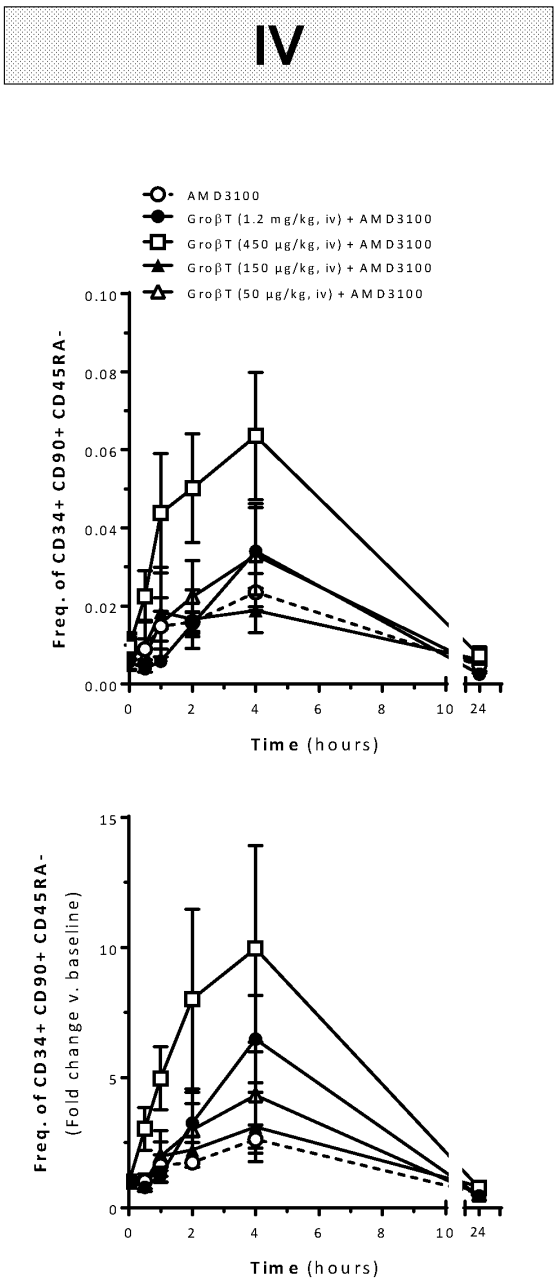

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Freq. of CD34+ CD90+ CD45RA-
0.10
0.08
0.06
0.04
0.02
0.00
0
2
4
6
8
10
24
Time (hours)
Freq. of CD34+ CD90+ CD45RA-
(Fold change v. baseline)
15
10
5
0
0
2
4
6
8
10
24
Time (hours)

FIG. 9B

SC

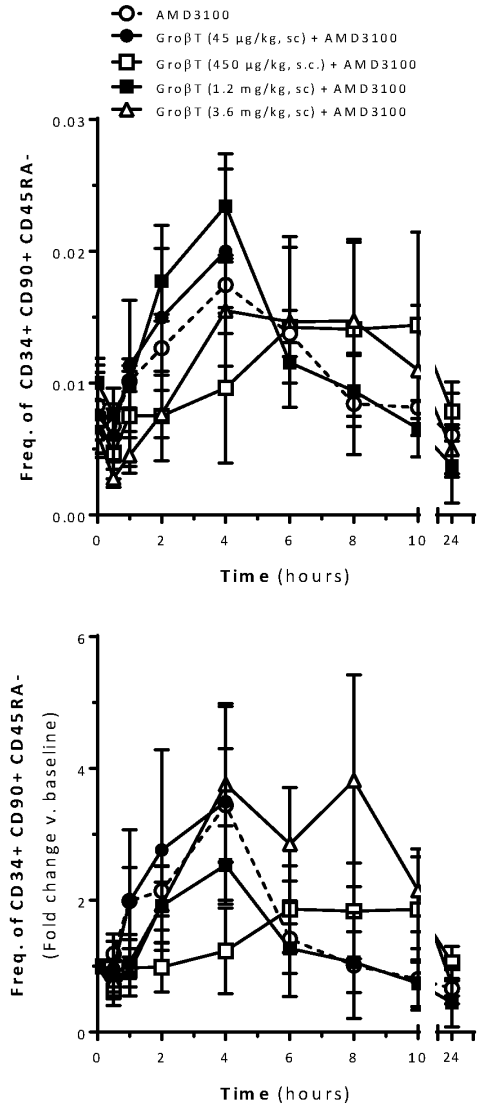

AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Freq. of CD34+ CD90+ CD45RA-
0.03
0.02
0.01
0.00
0
2
4
6
8
10
24
Time (hours)
Freq. of CD34+ CD90+ CD45RA-
(Fold change v. baseline)
6
4
2
0
0
2
4
6
8
10
24
Time (hours)

FIG. 10A

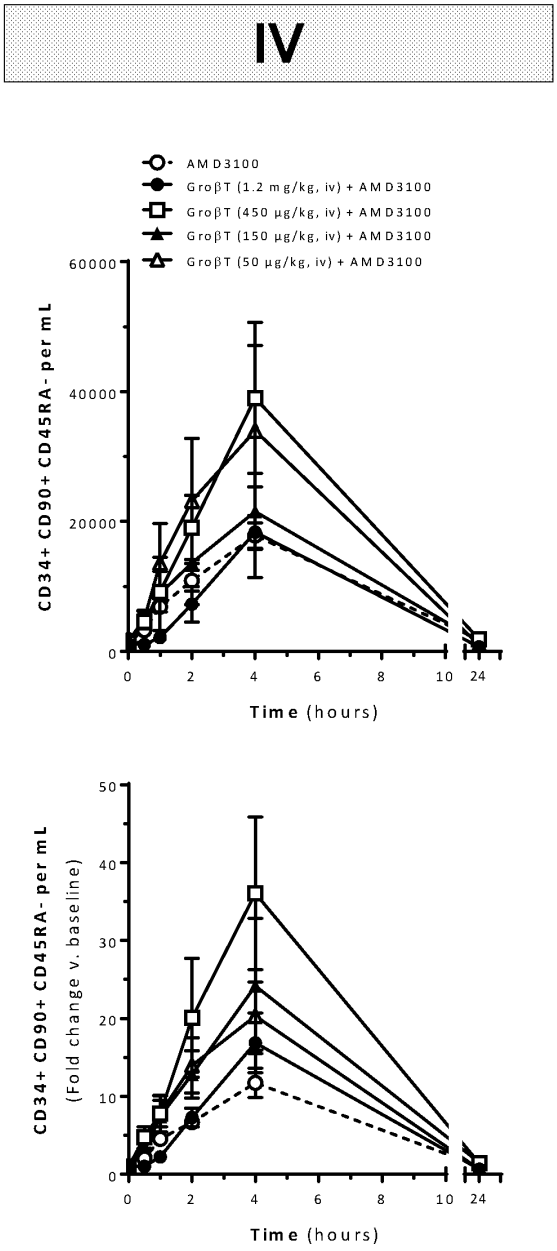

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
CD34+ CD90+ CD45RA- per mL
60000
40000
20000
0
0 2 4 6 8 10 24
Time (hours)
CD34+ CD90+ CD45RA- per mL
(Fold change v. baseline)
50
40
30
20
10
0
0 2 4 6 8 10 24
Time (hours)

FIG. 10B

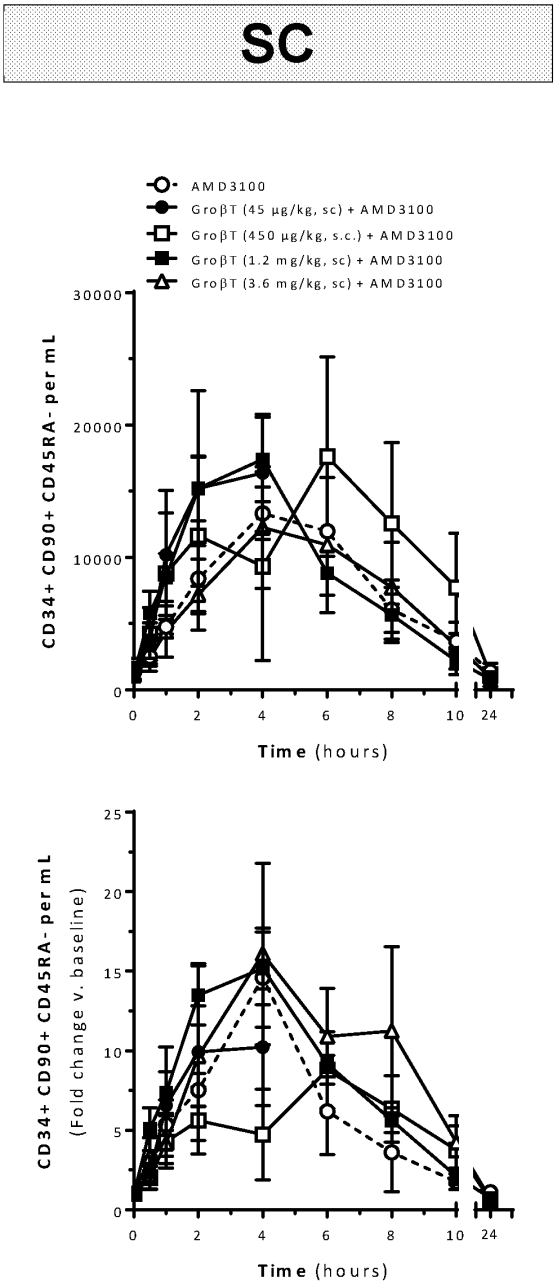

SC
AMD3100
GroβT (45 µg/kg, sc) + AMD3100
GroβT (450 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
CD34+ CD90+ CD45RA- per mL
30000
20000
10000
0
0 2 4 6 8 10 24
Time (hours)
CD34+ CD90+ CD45RA- per mL
(Fold change v. baseline)
25
20
15
10
5
0
0 2 4 6 8 10 24
Time (hours)

FIG. 11

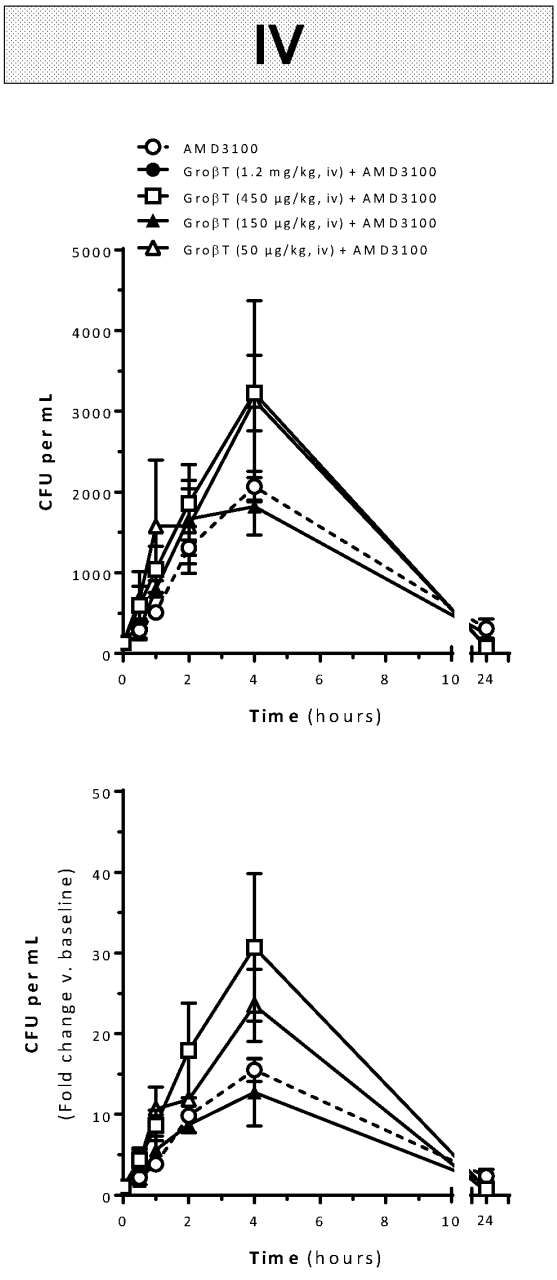

IV
AMD3100
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
CFU per mL
5000
4000
3000
2000
1000
0
0
2
4
6
8
10
24
Time (hours)
CFU per mL
(Fold change v. baseline)
50
40
30
20
10
0
0
2
4
6
8
10
24
Time (hours)

FIG. 12A

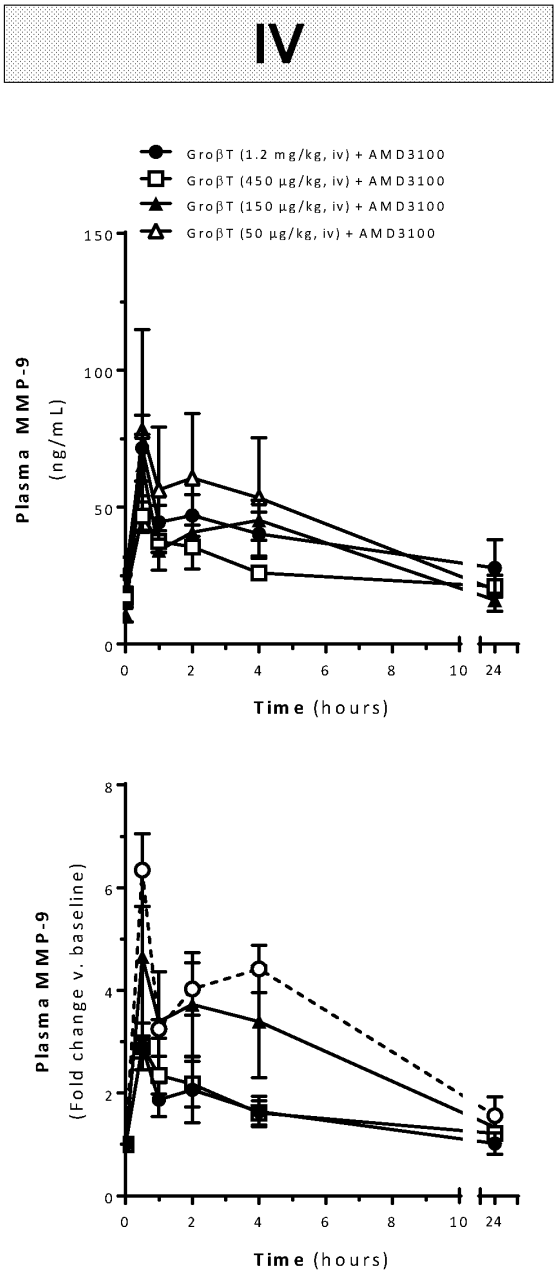

IV
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Plasma MMP-9 (ng/mL)
150
100
50
0
0 2 4 6 8 10 24
Time (hours)
Plasma MMP-9 (Fold change v. baseline)
8
6
4
2
0
0 2 4 6 8 10 24
Time (hours)

FIG. 12B

SC

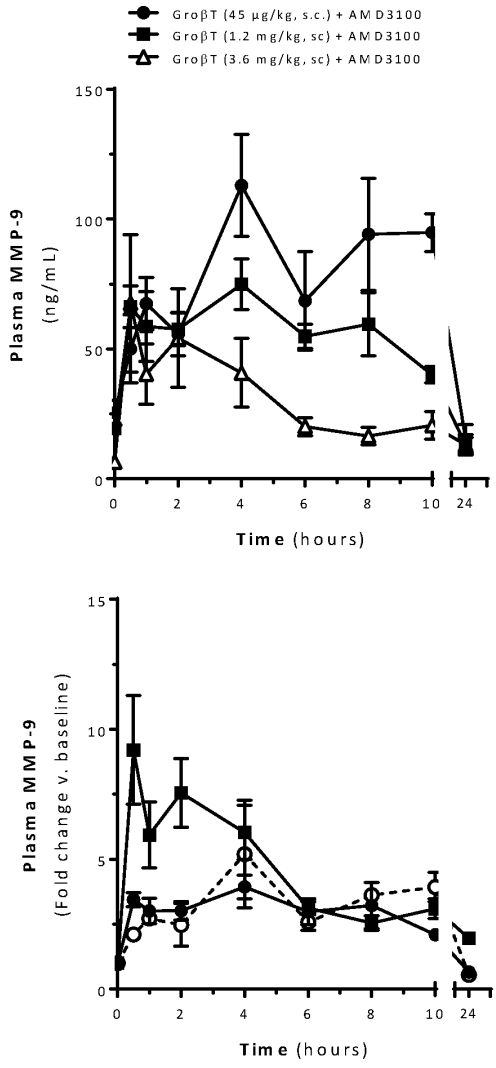

GroβT (45 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Plasma MMP-9 (ng/mL)
150
100
50
0
0
2
4
6
8
10
24
Time (hours)
Plasma MMP-9 (Fold change v. baseline)
15
10
5
0
0
2
4
6
8
10
24
Time (hours)

FIG. 13A

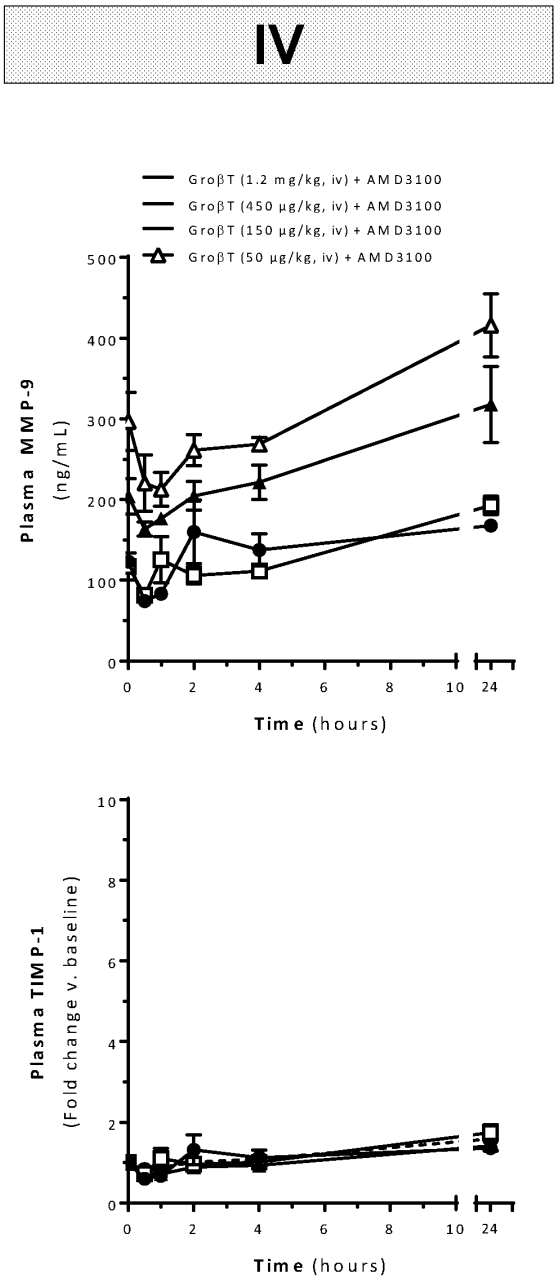

IV
GroβT (1.2 mg/kg, iv) + AMD3100
GroβT (450 µg/kg, iv) + AMD3100
GroβT (150 µg/kg, iv) + AMD3100
GroβT (50 µg/kg, iv) + AMD3100
Plasma MMP-9 (ng/mL)
500
400
300
200
100
0
0 2 4 6 8 10 24
Time (hours)
Plasma TIMP-1 (Fold change v. baseline)
10
8
6
4
2
0
0 2 4 6 8 10 24
Time (hours)

FIG. 13B

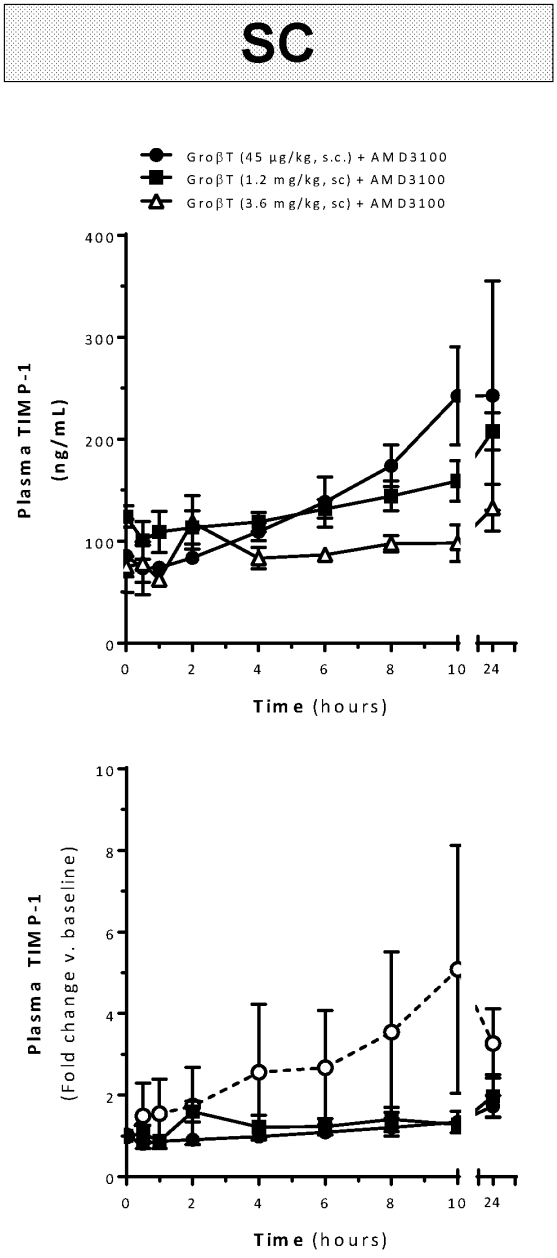

SC
GroβT (45 µg/kg, s.c.) + AMD3100
GroβT (1.2 mg/kg, sc) + AMD3100
GroβT (3.6 mg/kg, sc) + AMD3100
Plasma TIMP-1 (ng/mL)
400
300
200
100
0
0
2
4
6
8
10
24
Time (hours)
Plasma TIMP-1 (Fold change v. baseline)
10
8
6
4
2
0
0
2
4
6
8
10
24
Time (hours)

FIG. 14A

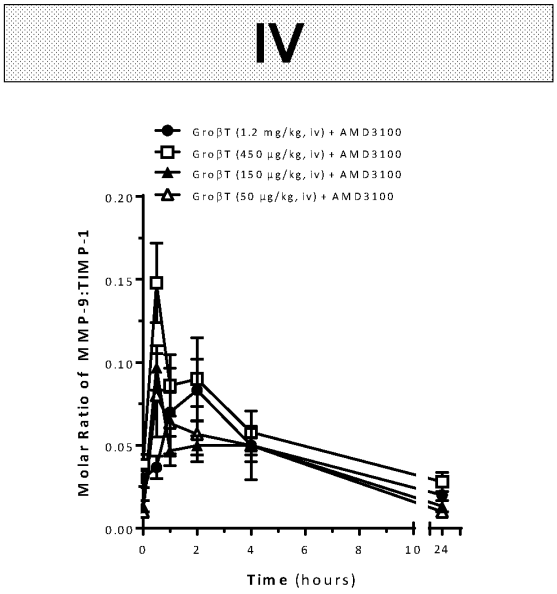


FIG. 14B

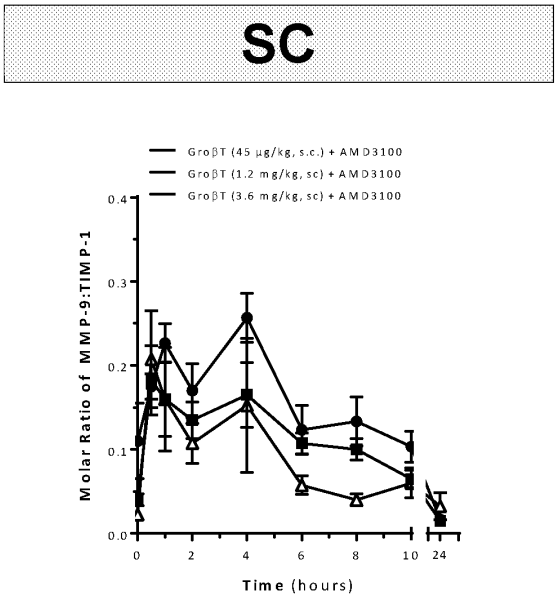


Fig. 15

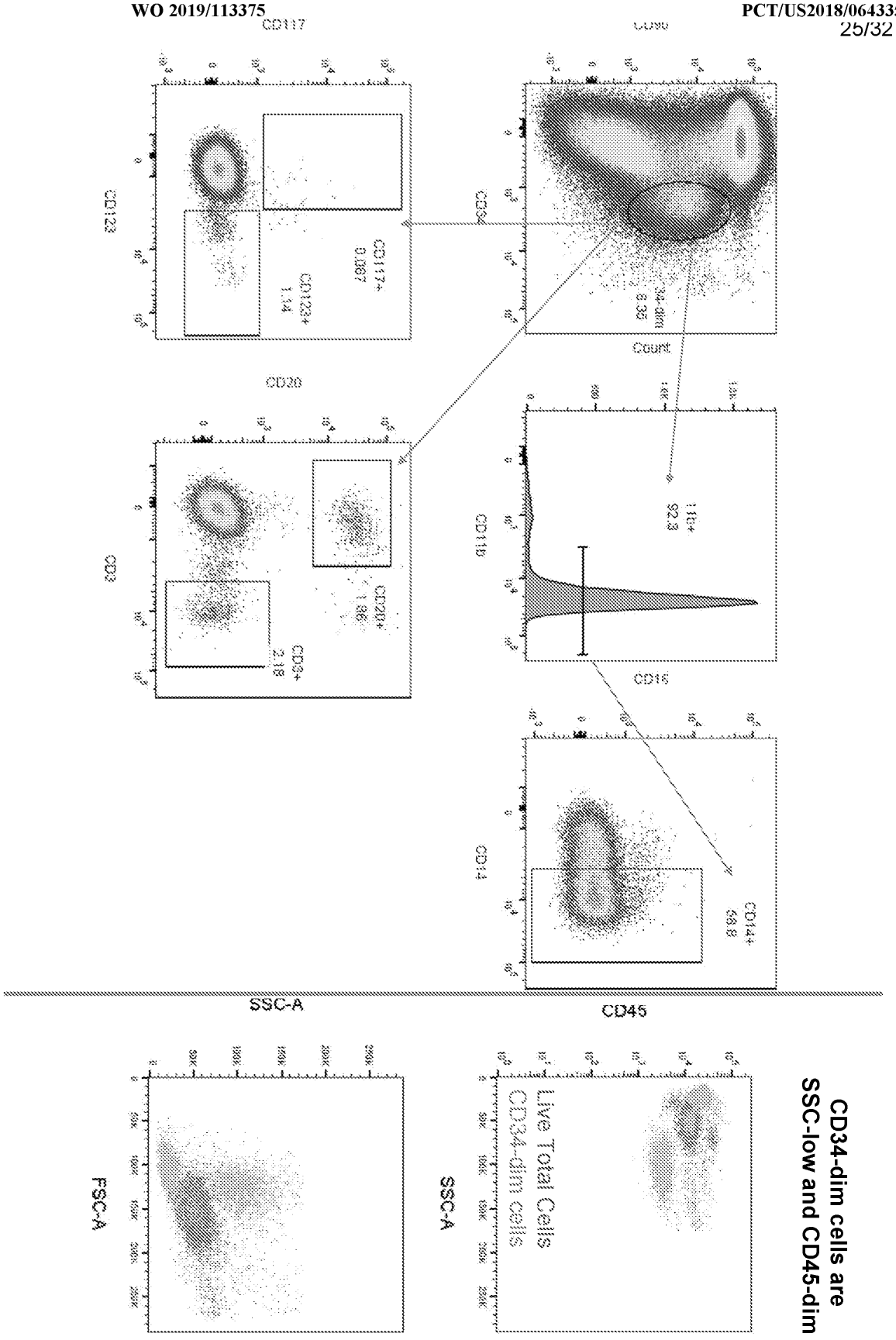

CD117
CD123
CD117+
0.067
CD123+
1.14
CD34
CD34-dim
6.35
Count
CD20
CD3
CD20+
1.86
CD3+
2.18
CD11b
110+
92.3
CD16
CD14
CD14+
68.8
SSC-A
CD45
FSC-A
SSC-A
Live Total Cells
CD34-dim cells
CD34-dim cells are
SSC-low and CD45-dim

Fig. 16: Gro-βT + plerixafor mobilizes a population of CD34^{dim} cells in rhesus macaques

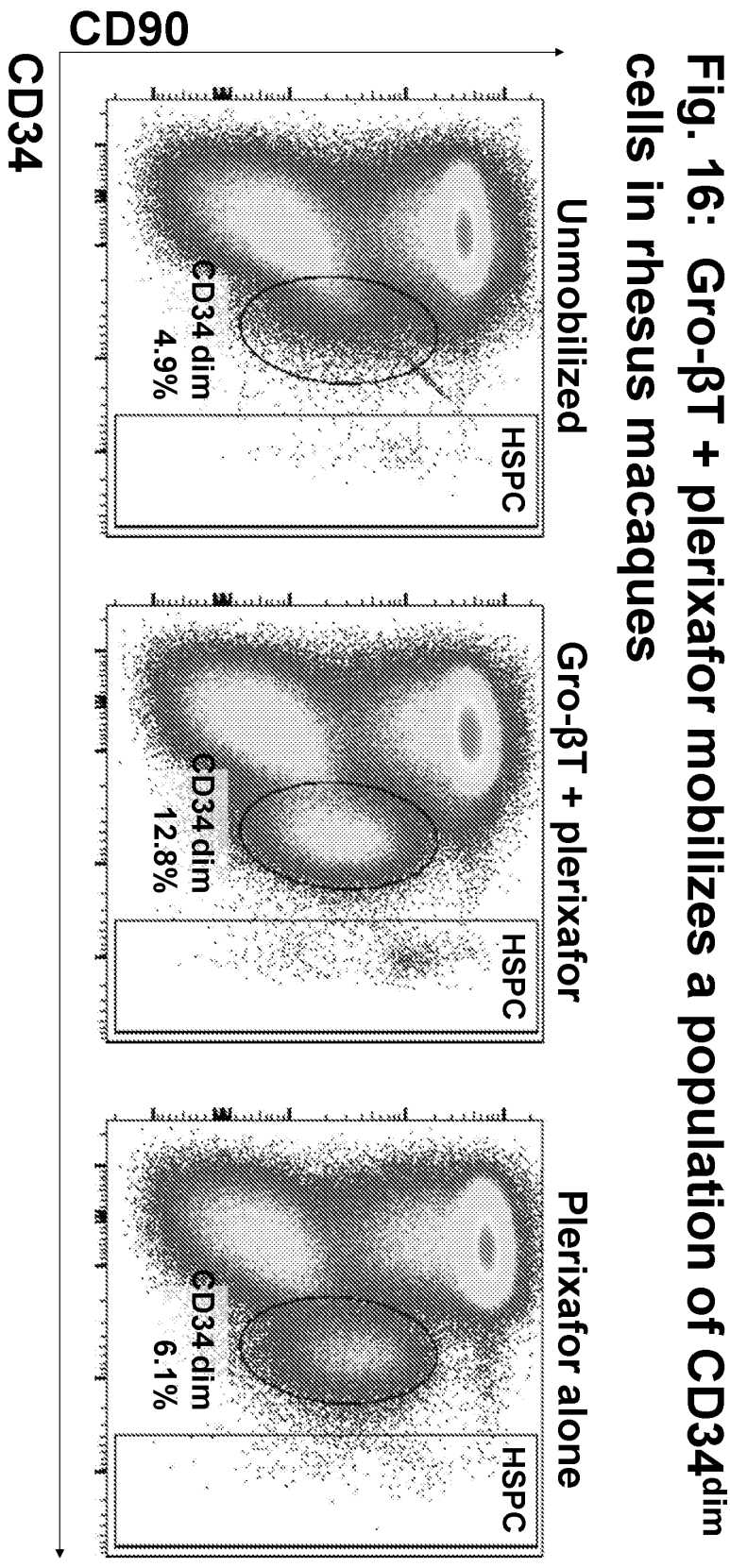


FIG 17.

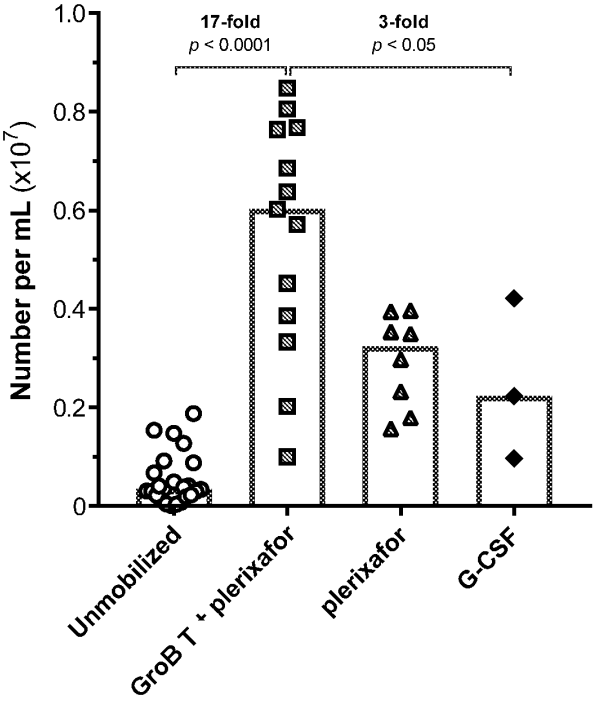

17-fold
p < 0.0001
3-fold
p < 0.05
Number per mL (x10^7)
1.0
0.8
0.6
0.4
0.2
0
Unmobilized
GroB T + plerixafor
plerixafor
G-CSF

FIG. 18

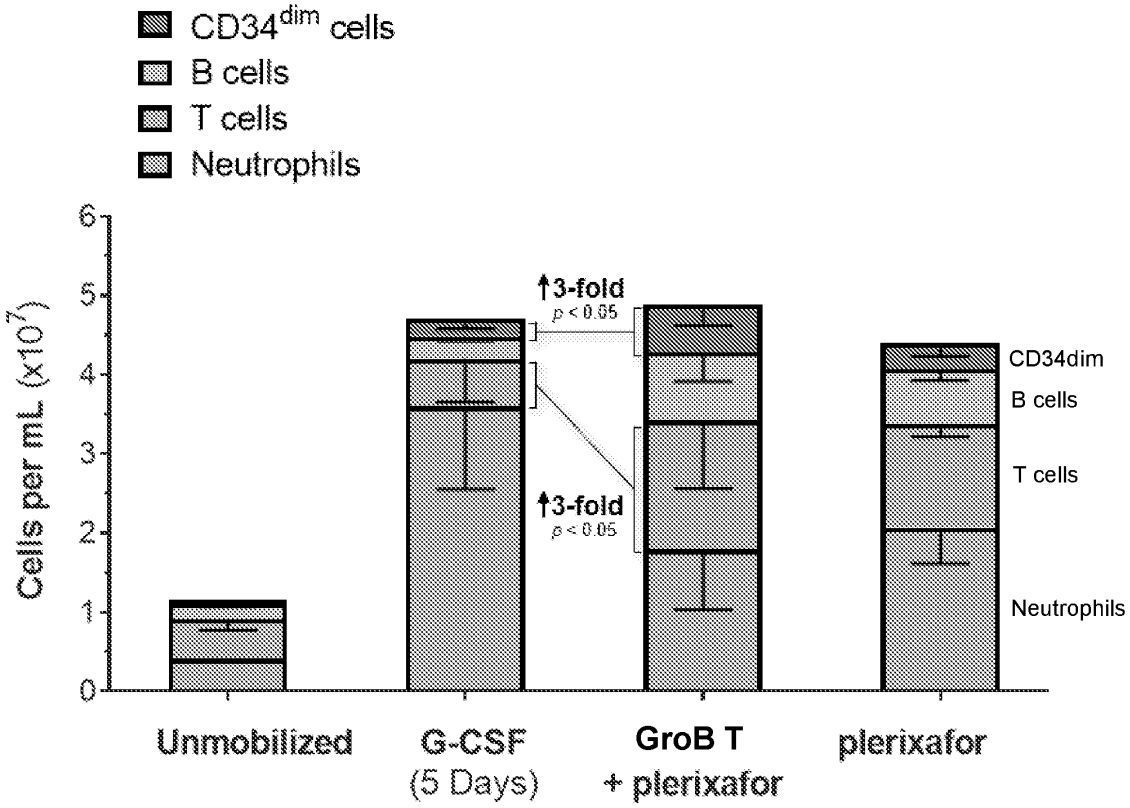

CD34dim cells
B cells
T cells
Neutrophils
Cells per mL (x10^7)
0
1
2
3
4
5
6
↑3-fold
p < 0.05
↑3-fold
p < 0.05
CD34dim
B cells
T cells
Neutrophils
Unmobilized
G-CSF
(5 Days)
GroB T
+ plerixafor
plerixafor

FIG. 19

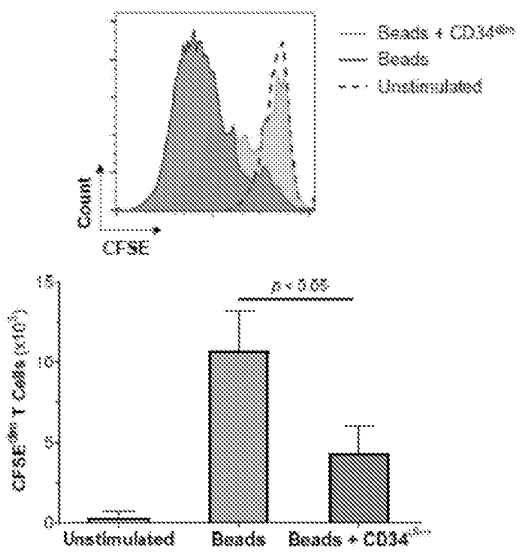

Beads + CD34dim
Beads
Unstimulated
Count
CFSE
p < 0.05
Unstimulated
Beads
Beads + CD34dim

FIG. 20

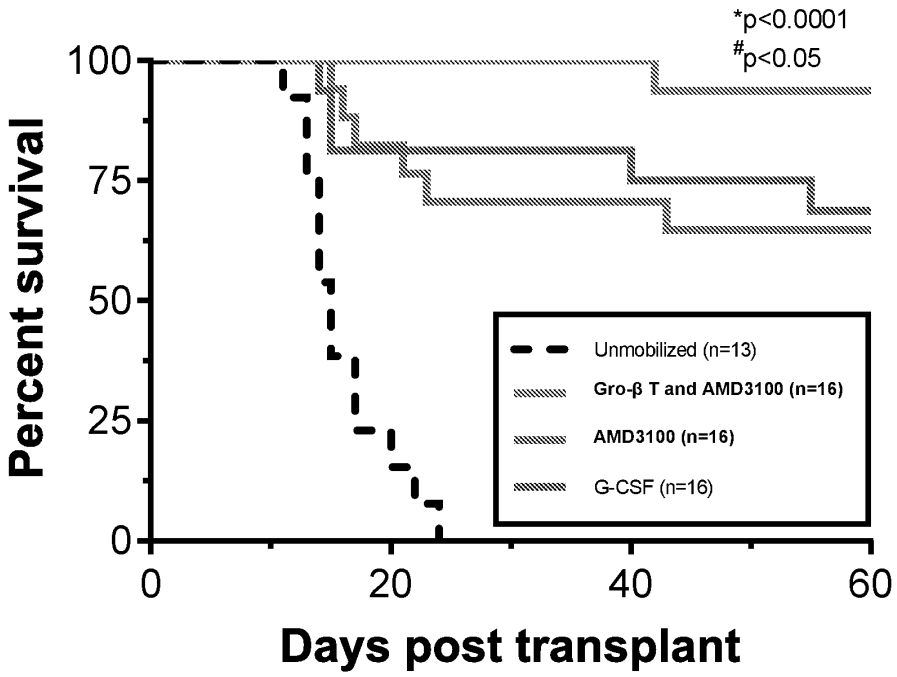
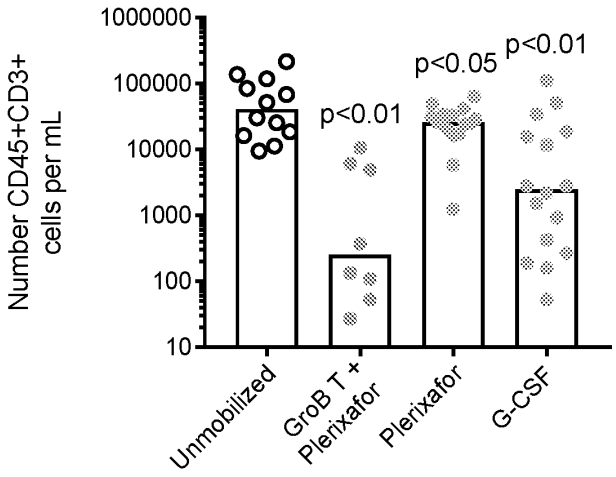

*p<0.0001
#p<0.05
Percent survival
100
75
50
25
0
0
20
40
60
Days post transplant
Unmobilized (n=13)
Gro-β T and AMD3100 (n=16)
AMD3100 (n=16)
G-CSF (n=16)

FIG. 21

A.


Number CD45+CD3+ cells per mL
1000000
100000
10000
1000
100
10
p<0.01
p<0.05
p<0.01
Unmobilized
GroB T + Plerixafor
Plerixafor
G-CSF

B.

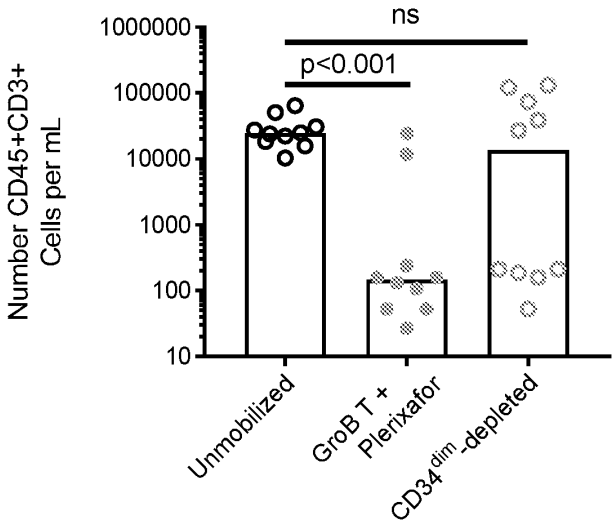
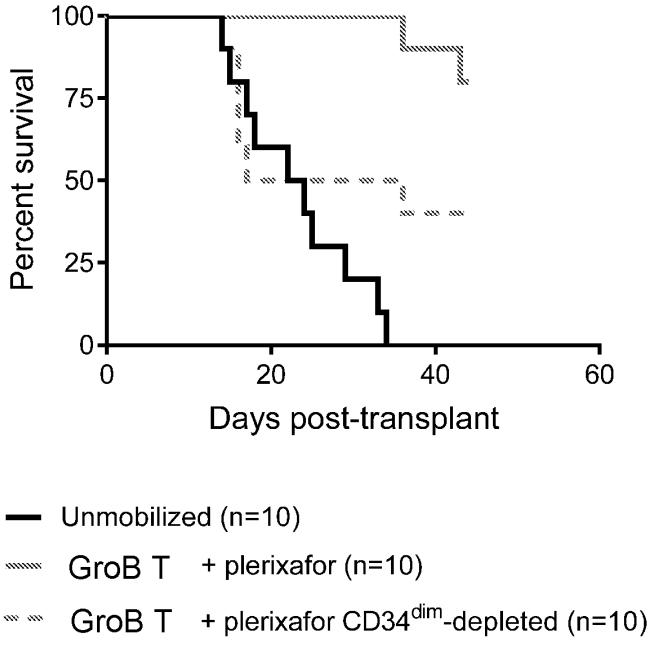

Number CD45+CD3+ Cells per mL
1000000
100000
10000
1000
100
10
ns
p<0.001
Unmobilized
GroB T + Plerixafor
CD34dim -depleted

FIG. 21

C.


100
75
50
25
0
Percent survival
0
20
40
60
Days post-transplant
Unmobilized (n=10)
GroB T + plerixafor (n=10)
GroB T + plerixafor CD34dim-depleted (n=10)