

Effect of high-dose plerixafor on CD34⁺ cell mobilization in healthy stem cell donors: results of a randomized crossover trial

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Supplemental materials:

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Supplemental Table S1. Peripheral Blood CD34+ cells, CD34+ cell AUC and time to peak CD34+ count.

	Plerixafor 240 µg/kg Median (range)	Plerixafor 480 µg/kg Median (range)	Paired Difference median(IQR)	<i>P</i> value
Peak CD34+ (cells/µL)	25 (13–58)	31.5 (17–64)	4.5 (2.5–6.3)	0.0009
CD34+ cell AUC 0-24 hrs (h cells/µL)	411 (229–991)	543 (275–1191)	109 (53–184)	<0.0001
CD34+ cells/µL at 24 hr	9 (2-33)	15.5 (7–52)	6 (4–10)	<0.0001
Time to CD34+ peak (hrs)	8 (6–12)	10 (6–18)	2 (0–4)	0.011

Note: Data are median (range), or median (IQR) for the paired difference.

Supplemental Table S2. Peak CD34+ cell counts achieved and their ratios.

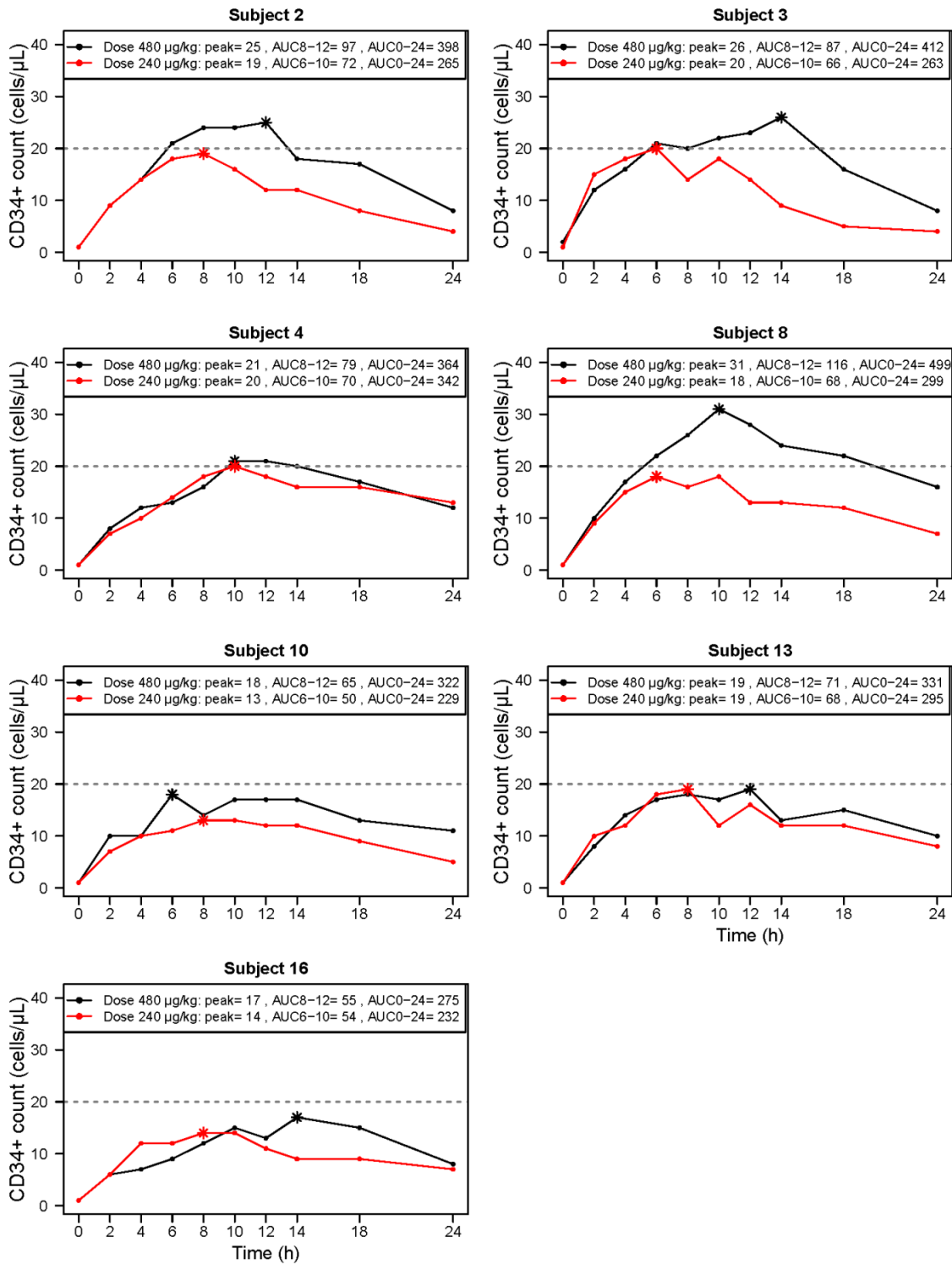
patient no.	peak CD34+ after 240 µg/kg Plerixafor (cells/µL)	peak CD34+ after 480 µg/kg Plerixafor (cells/µL)	ratio of peak CD34+ for 480 µg/kg vs. 240 µg/kg Plerixafor
1	13	18	1.38
2	14	17	1.21
3	18	31	1.72
4	19	25	1.32
5	19	19	1.00
6	20	26	1.30
7	20	21	1.05
8	21	24	1.14
9	23	27	1.17
10	24	43	1.79
11	26	32	1.23
12	27	24	0.89
13	29	36	1.24
14	32	40	1.25
15	34	38	1.12
16	36	33	0.92
17	38	41	1.08
18	45	52	1.16
19	47	44	0.94
20	58	64	1.10

Supplemental Figure S1. Circulating CD34+ cell AUC (h cells/ μ L) and peak circulating CD34+ cells/ μ L (*) in the 7 subjects who mobilized poorly following the 240 μ g/kg dose of plerixafor (defined as those who had a peak circulating CD34+ counts \leq 20 cells/ μ L with the conventional dose of plerixafor).

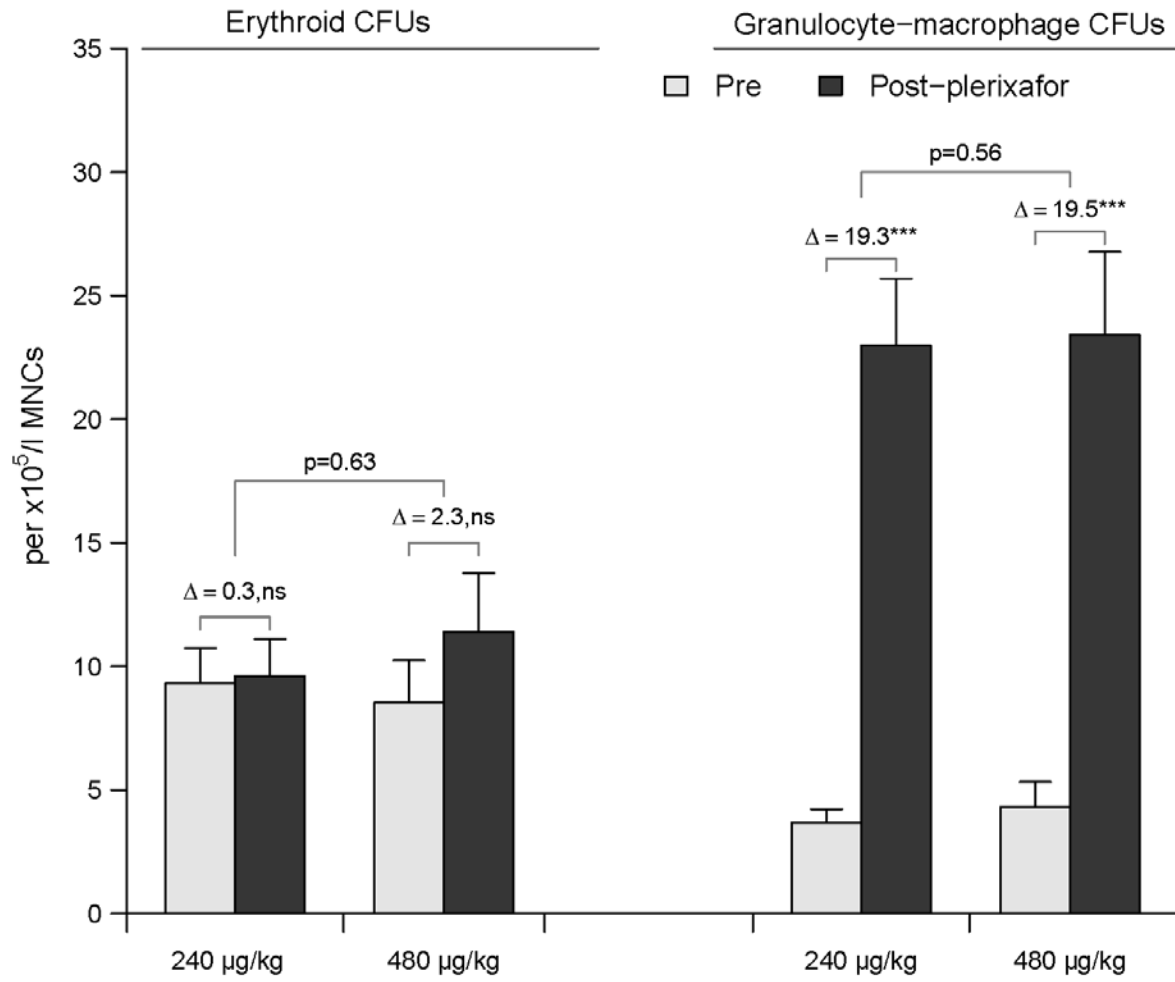
Supplemental Figure S2. Erythroid and granulocyte-macrophage CFU colony forming units from peripheral blood samples. Mean number of colonies per 10^5 /mL mononuclear cells prior to and 6 hours after the administration of 240 and 480 μ g/kg of plerixafor. Error bars indicate the SEM. ns: not significant, ***: $P < 0.0001$.

Peripheral blood mononuclear cells were isolated using standard Ficoll-hypaque density gradient separation and inoculated at 1×10^5 cells/mL in three different methylcellulose culture media (MethoCult H4230; Stem Cell Technologies, Vancouver, Canada), supplemented with 5 μ g/mL of recombinant human (rHu) erythropoietin (Epo; Amgen, Thousand Oaks, CA, USA), 10 ng/mL rHu granulocyte-macrophage colony stimulating factor (GM-CSF; Sandoz, East Hanover, NJ, USA), 10 ng/mL rHu interleukin-3, and 100 ng/mL rHu stem cell factor (SCF; R&D Systems, Minneapolis, MN, USA). Plated cells were incubated at 37 $^{\circ}$ C with 5% CO₂ for 10–14 days. Colonies were then counted, and pre-plerixafor dosing colonies were compared to post-plerixafor dosing colonies.

Supplemental Figure S3. Estimated apheresis CD34+ cell yield



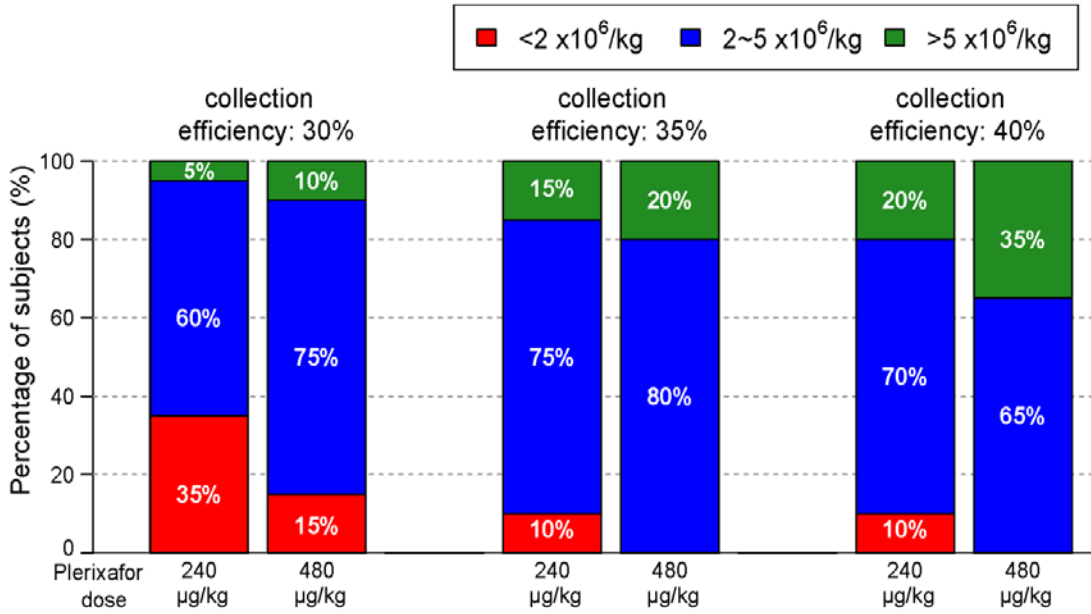
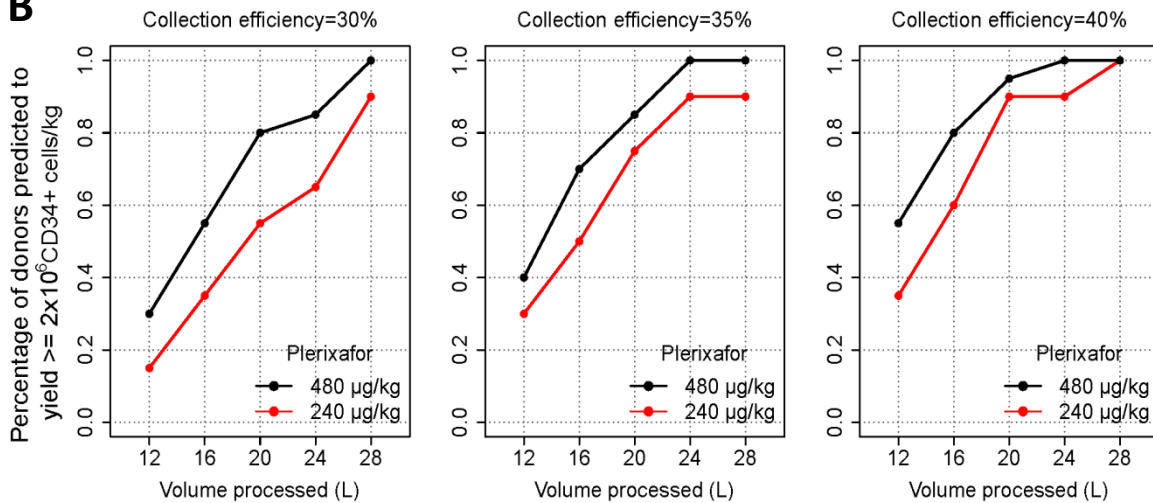
Supplemental Figure S1.



Supplemental Figure S2.

A

Estimated apheresis CD34+ cell yield (24 L)

**B**

Supplemental Figure S3.