**SUPPLEMENTARY INFORMATION**

**Supplementary Figure Legends**

**Supplementary Figure 1: Purification of human HSC from cord blood.** (**A**) Flow cytometry plots and gating strategy used for the purification of human HSC, defined as $Lin^-CD34^+CD38^-CD90^+$ cells, from cord blood. (**B**) Post-sort analysis of purified human HSC from panel A.

**Supplementary Figure 2: Comparison of Esam1 cell surface expression on CD34+ and CD34- KLSF ($c\text{-}kit^+Lin^-Sca1^+Flk2^-$) cells from mouse BM.**

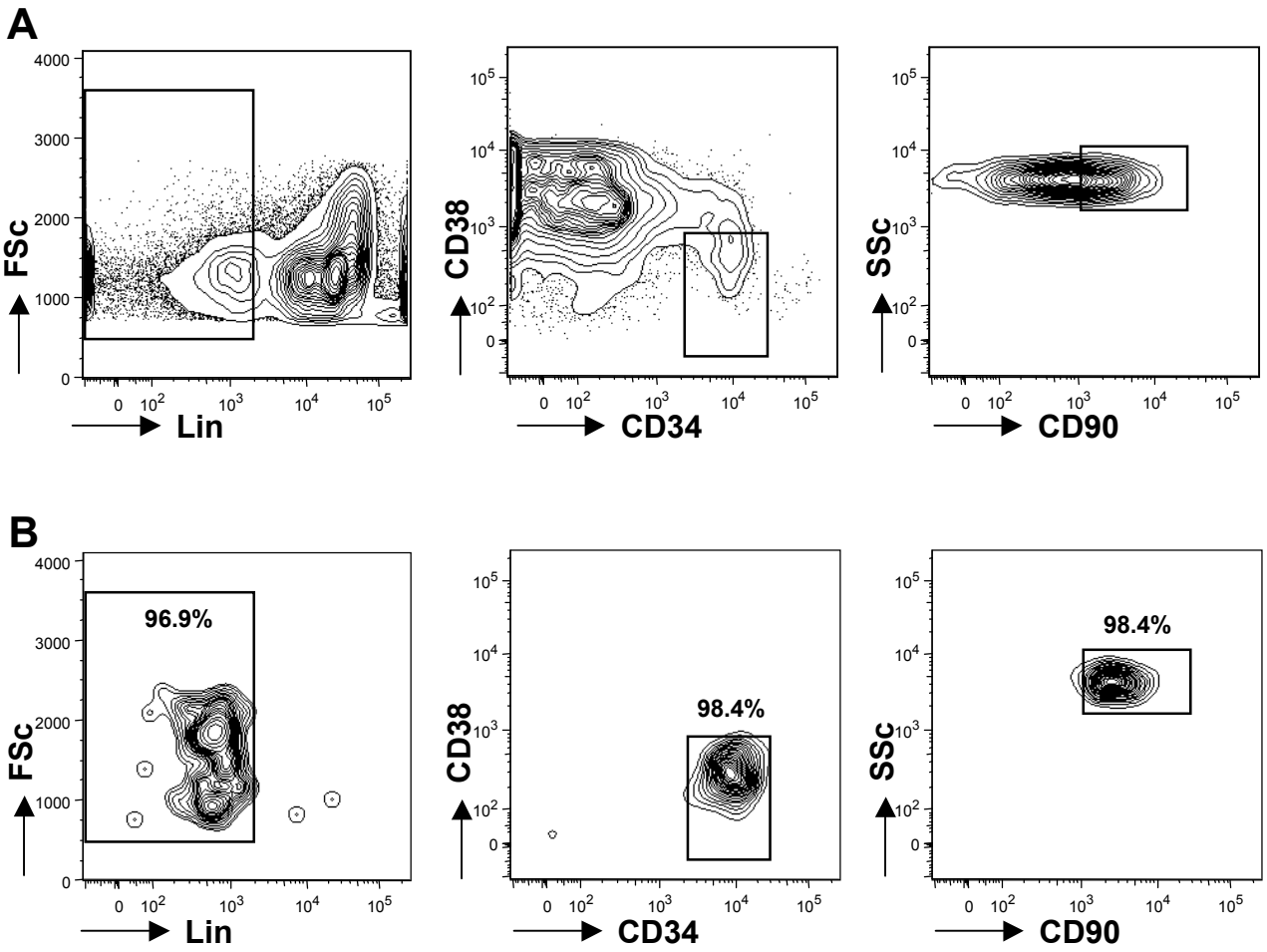
**Supplementary Figure 3: Analysis of Esam1 cell surface expression on defined hematopoietic subpopulations from mouse BM.** (**A**) Flow cytometry plots and gating strategy used to assess Esam1 cell surface protein expression. Grey histograms, negative control stain (fluorescence minus one); red histograms, Esam1 expression. CMP, common myeloid progenitors; GMP, granulocyte/monocyte progenitor; MEP, megakaryocyte/erythroid progenitor; CLP, common lymphoid progenitor.

**Supplementary Figure 4: Enrichment of putative HSC using Esam1 as a marker in different mouse strains.** Esam1 strongly enriches for the putative HSC-containing $c\text{-}kit^+Slamf1^+Lin^-$ population in C57BL/6, FVB, BALB/c and AKR strains. The left column shows the c-kit versus Slamf1 profile for the Lin- cell population across four different mouse strains and the right column shows the c-kit versus Slamf1 profile for the $Lin\text{-}Esam1^+$ cell population across the four different mouse strains as indicated. Adding Esam1 as a marker enriches for $c\text{-}kit^+Slamf1^+Lin^-$ cells in all strains examined.

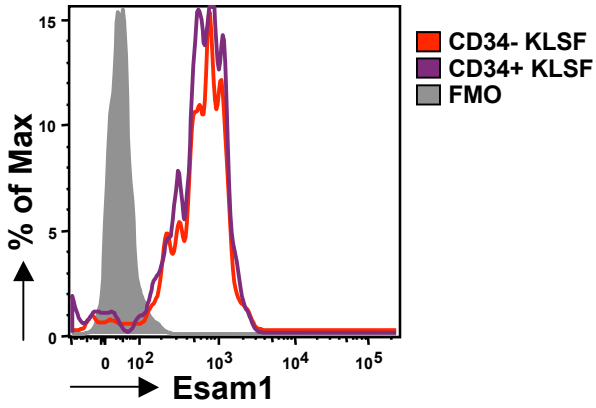
**Supplementary Figure 5: Peripheral blood chimerism in mice transplanted with $10^5$ unfractionated mononuclear bone marrow cells from wildtype or Esam1-deficient mice.** (**A**)

Total donor chimerism. WBM cell from Esam1$^{-/-}$ mice give rise to slightly more progeny compared to WBM cells from wt mice. Differences were not statistically significant ($p>0.05$). (**B**) Cell type composition in mice from (A). By 21 weeks, mice transplanted with cells from Esam1-deficient mice gave rise to more T cells as compared to mice transplanted with cells from wildtype mice (*, $p<0.008$, Student's *t* test).

**Supplemental Figure 1** ***Forsberg***

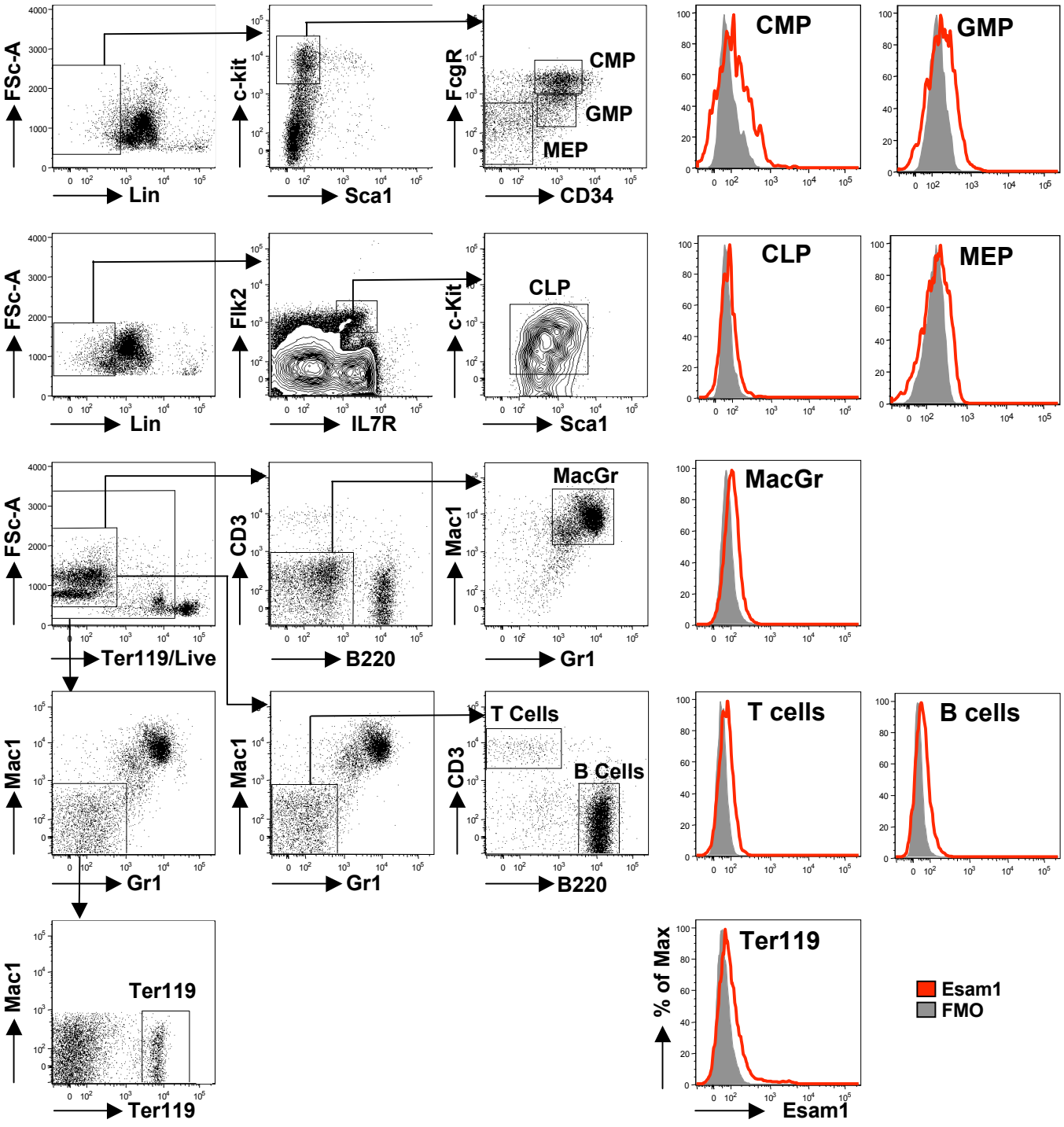


**Supplemental Figure 2** *Forsberg*

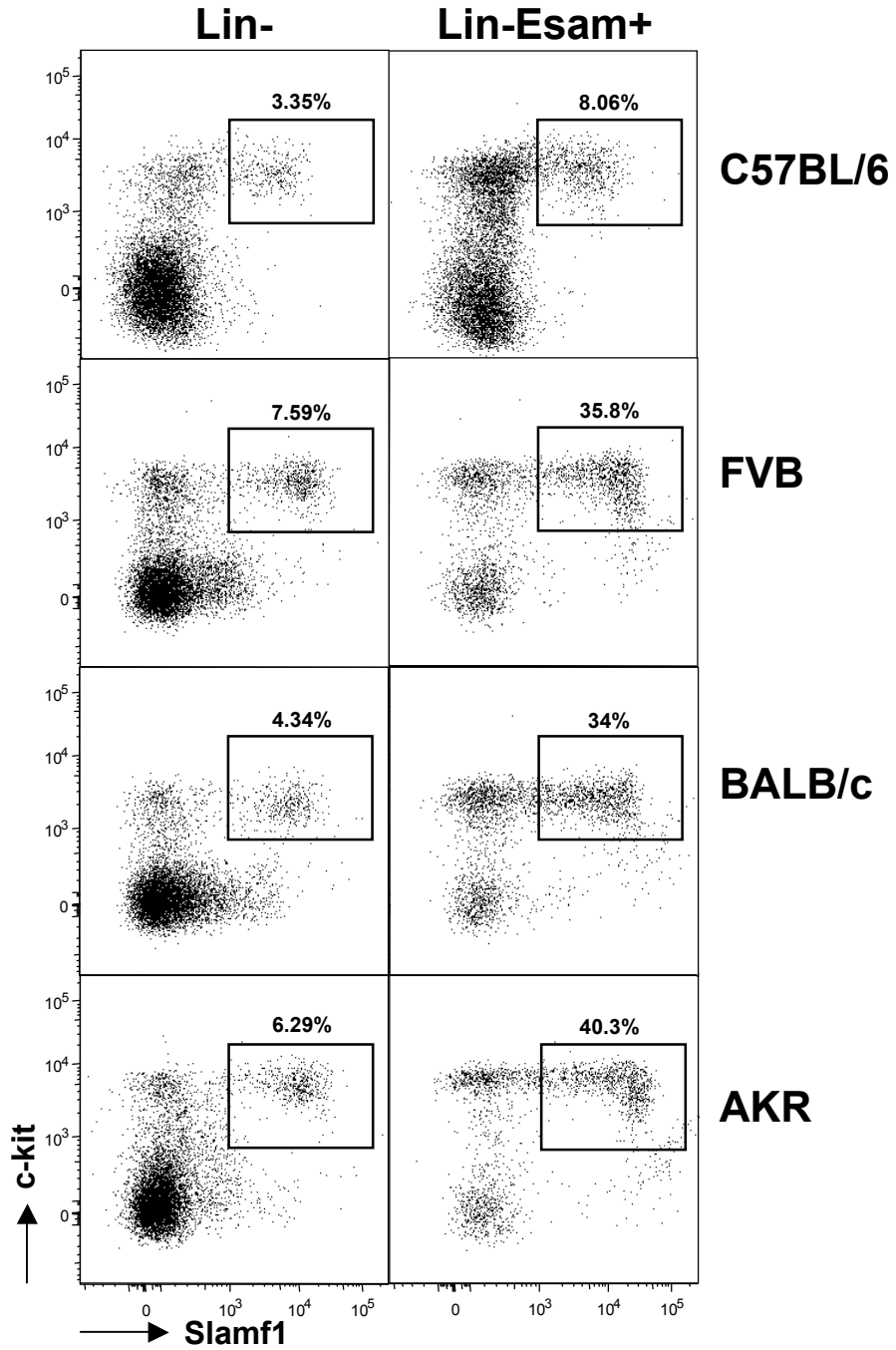


# Supplemental Figure 3

*Forsberg*



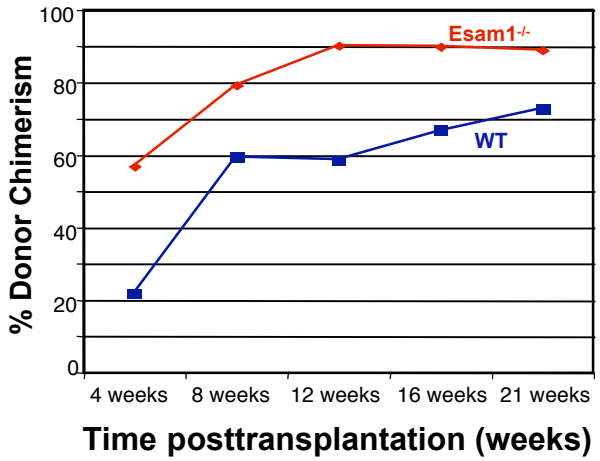
**Supplemental Figure 4** ***Forsberg***



# Supplemental Figure 5

*Forsberg*

A




B