

## SUPPLEMENTARY FIGURE SECTION

**Title: *Direct bone marrow HSC transplantation enhances local engraftment at the expense of systemic engraftment in NSG mice***

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### Figure Captions:

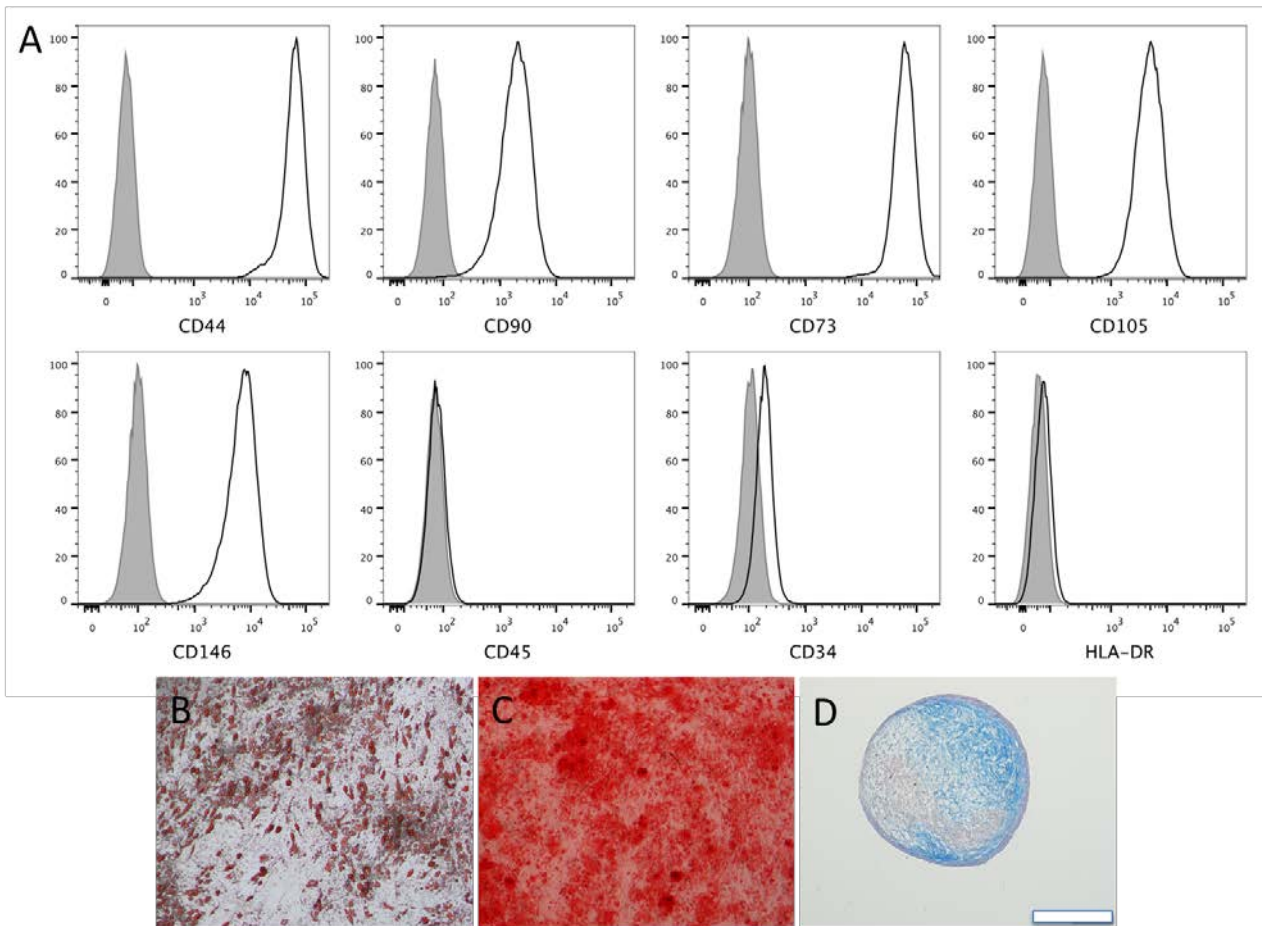
**Supplementary Figure 1.** MSC surface marker characterization and trilineage differentiation capacity. **(A)** BM-derived MSC were >95% positive for CD44, CD90, CD73, CD105, CD146, and <5% positive for CD45, CD34, and HLA-DR. Following 21 days of induction, MSC underwent **(B)** adipogenesis (oil red O staining of lipid vacuoles), **(C)** osteogenesis; alizarin red A staining of mineralized tissue, and **(D)** chondrogenesis; alcian blue staining of glycosaminoglycans. Scale bar = 400  $\mu$ m.

**Supplementary Figure 2.** Representative flow cytometry gating for engraftment analysis in BM. **(A)** Forward scatter and side scatter, doublet exclusion and dead cell exclusion. **(B)** Human and murine CD45 identification (left panel), and isotype controls (right panel). **(C)** Hematopoietic lineage assessment of CD19<sup>+</sup> (B cells), CD33<sup>+</sup> (myeloid), CD15<sup>+</sup> (granulocytes), CD34 (progenitor), and CD3 (T-cells, not detected).

**Supplementary Figure 3.** Plots A-D show the relative hCD45 engraftment within injected femurs (\*RF) and distal femurs (LF) for individual mice. A-D represent transplant groups 1-4 (see main text for details), respectively.

**Supplementary Figure 4.** Hematopoietic lineage commitment of hCD45 populations in the BM. (A-C) Lineage cells positive for CD19<sup>+</sup> (B cells), CD33<sup>+</sup> (myeloid), and CD15<sup>+</sup> (granulocytes). Lineage composition did not vary between femurs or between transplant groups.

**Supplementary Figure 5.** Hematopoietic lineage commitment of hCD45 populations in the peripheral blood (PB) and spleen (SP). (A-D) Lineage cells positive for CD19<sup>+</sup> (B cells), and CD33<sup>+</sup> (myeloid) cells. Lineage composition did not vary between transplant groups.



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3 **Supplementary Figure 1.** MSC surface marker characterization and trilineage differentiation

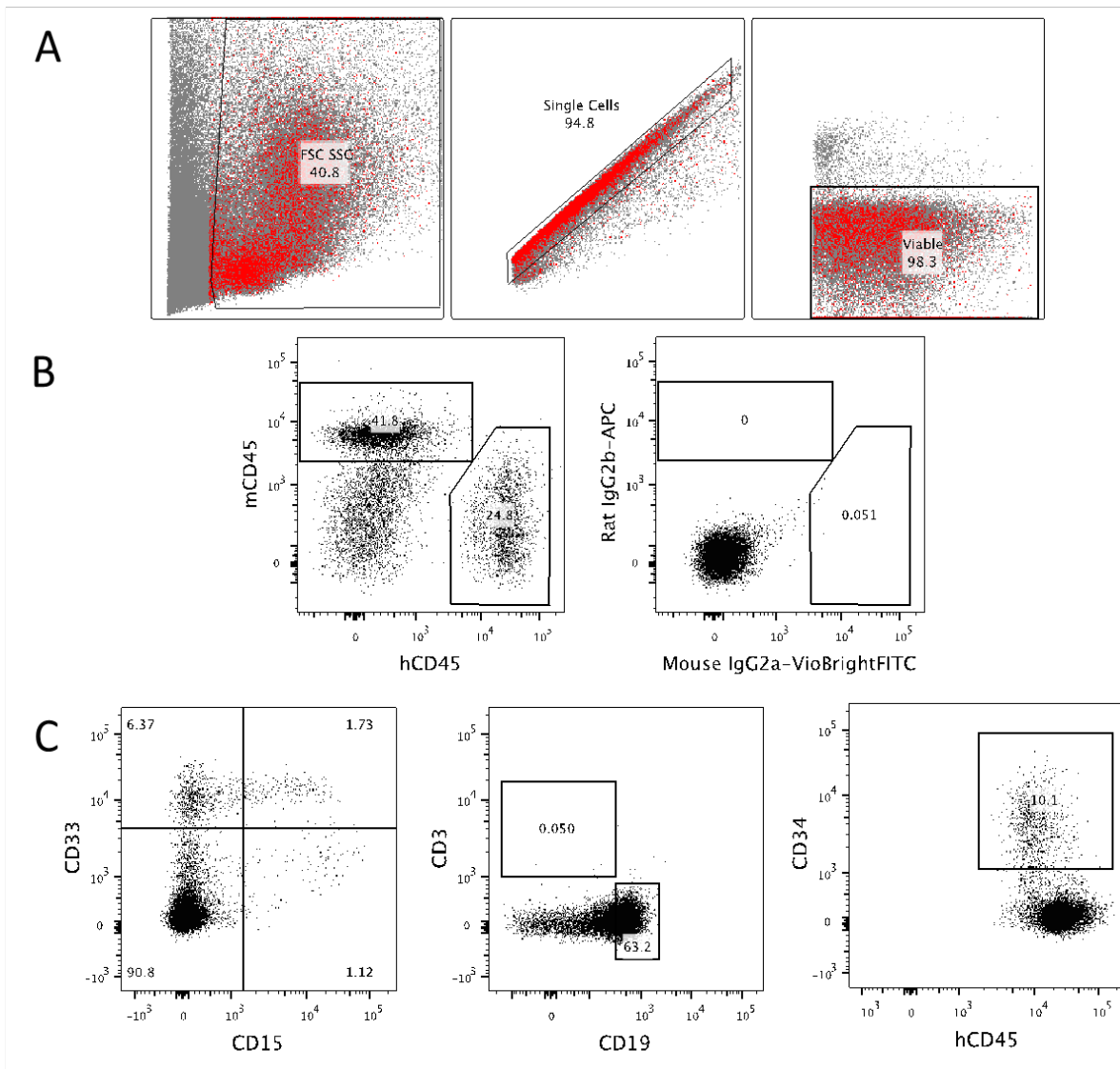
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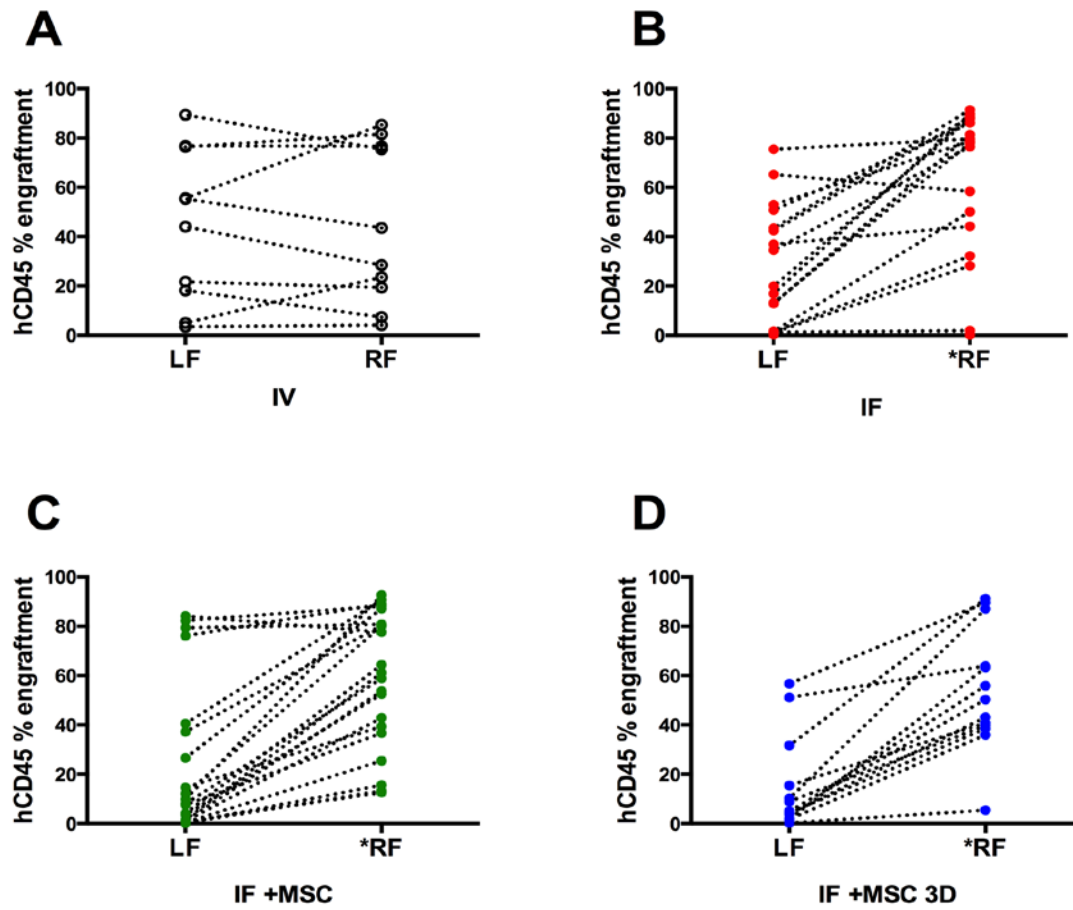
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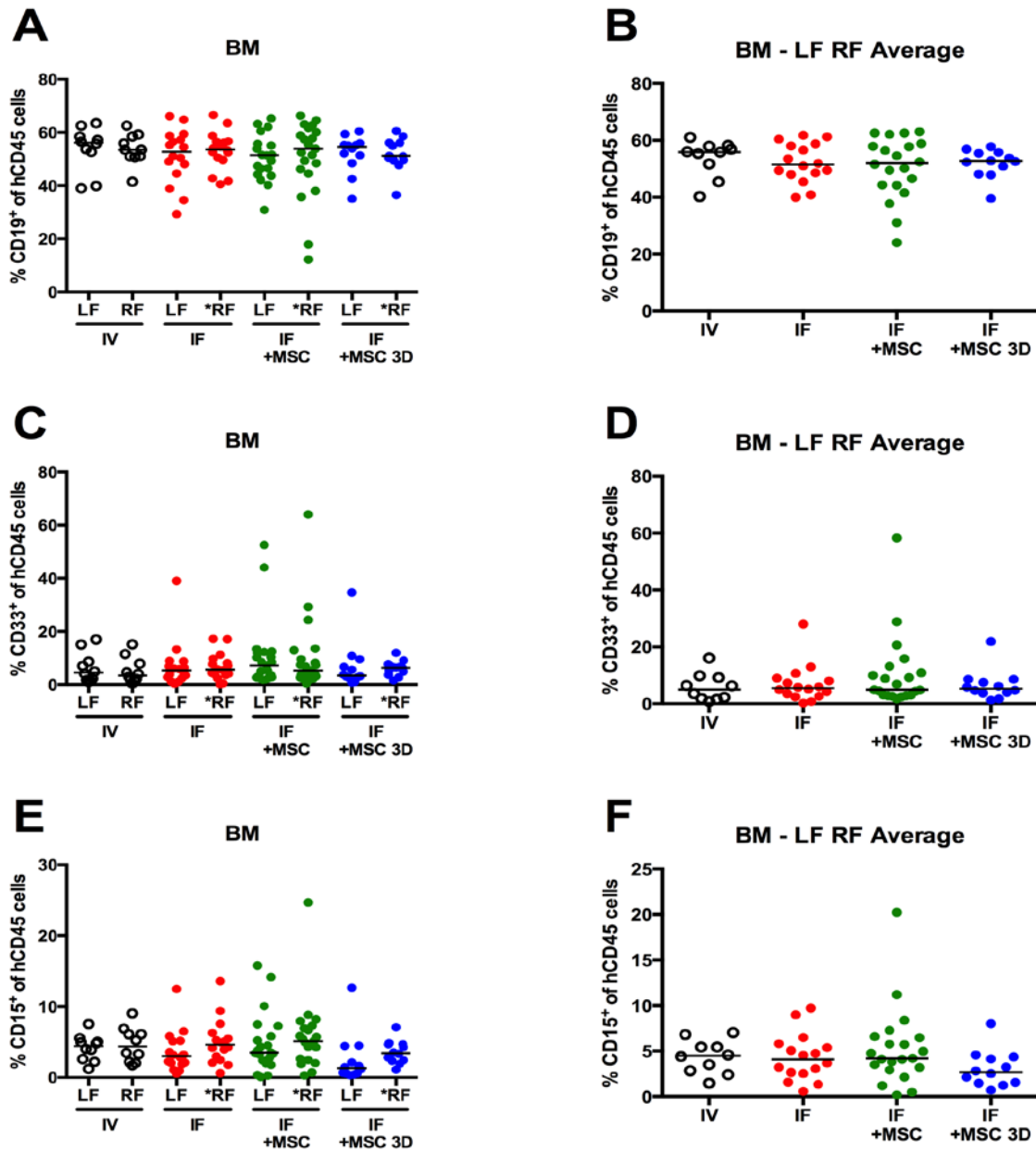
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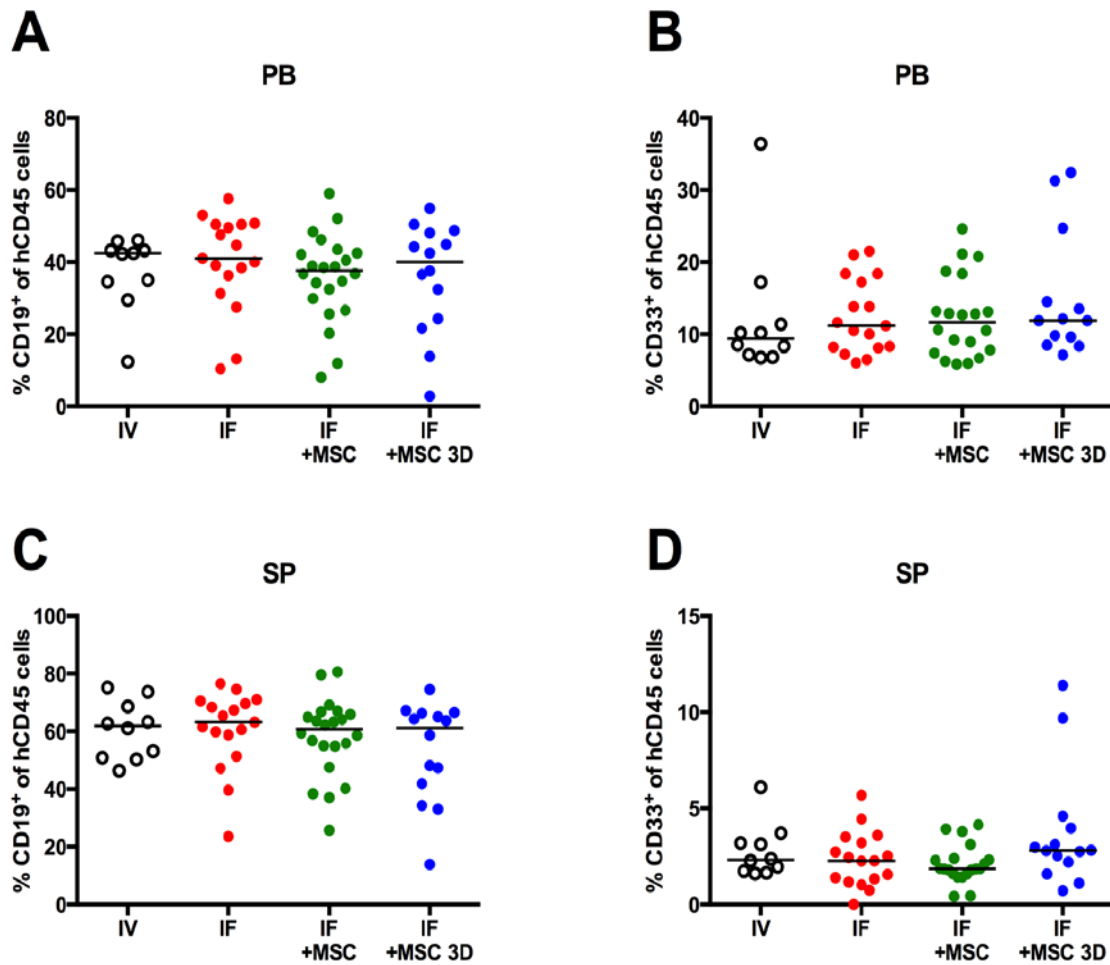
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