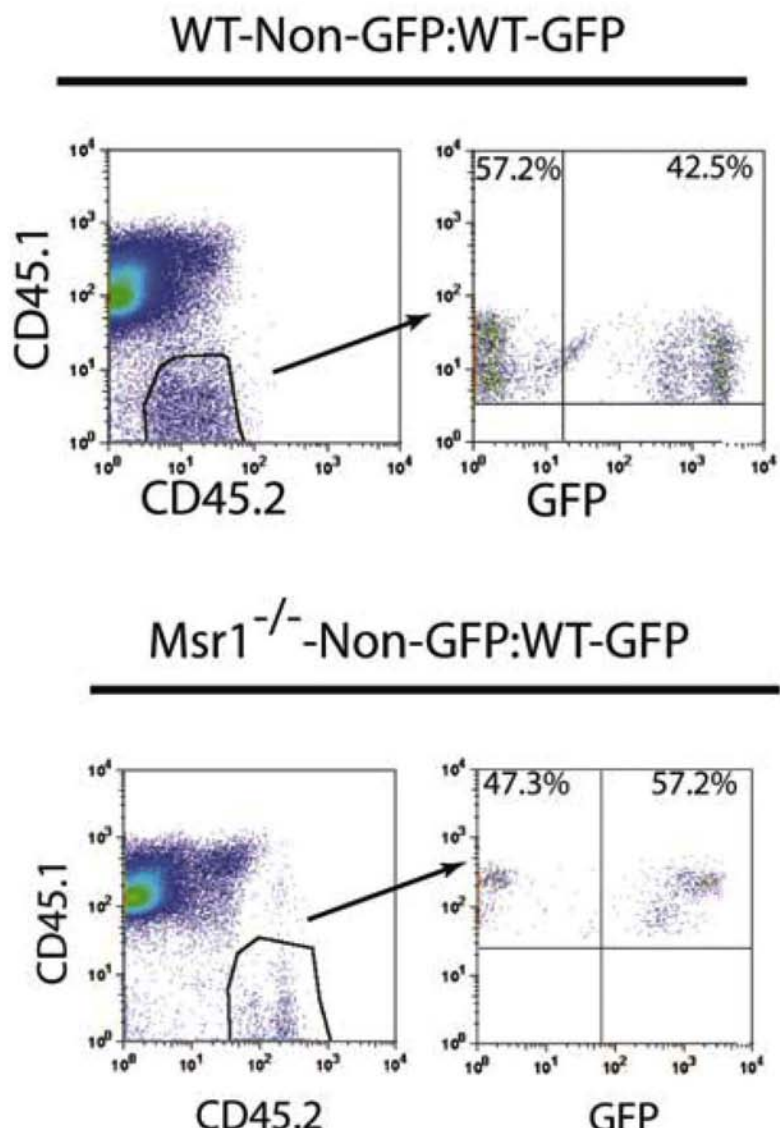


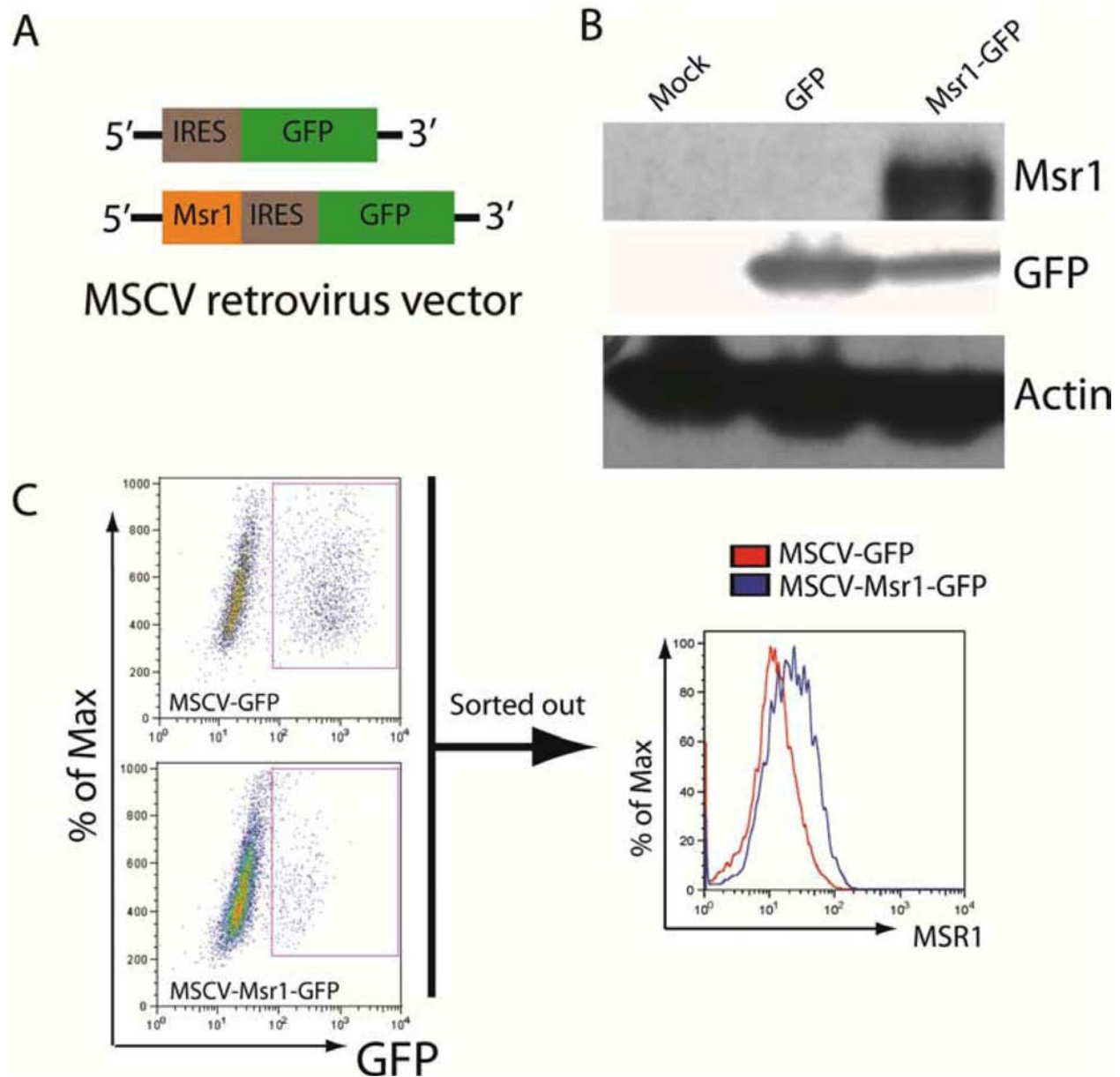
**Figure S1. Imatinib treatment didn't restore the expression of *Msr1* in LSCs**  
Expression of the *Msr1* gene was not restored by *BCR-ABL* kinase inhibitor imatinib treatment.

Competition:  
3 hours



**Figure S2.  $Msr1^{-/-}$  bone marrow cells do not exhibit a homing defect**

Bone marrow cells ( $6 \times 10^6$ ) from GFP mice (CD45.2) were mixed 1:1 with either bone marrow cells from wild type mice (CD45.2) or those from  $Msr1^{-/-}$  mice (CD45.2) and then transplanted by tail vein injection into wild type recipient mice (CD45.1). Three hours after the transplantation, by FACS analysis, CD45.2<sup>+</sup> bone marrow cells, representing the donor cells, were first identified and then analyzed for the percentages of GFP<sup>+</sup> and GFP<sup>-</sup> populations. The ratio of non-GFP and GFP populations were shown.



**Figure S3. *Msr1* is over-expressed in human leukemic cells**

(A) *pMSCV-Msr1-GFP* construct was made and *pMSCV-GFP* retrovirus was used as a control. (B) *pMSCV-Msr1-GFP* construct expressed MSR1 and GFP together while the *pMSCV-GFP* construct only expressed GFP in 293T cells. (C) Human leukemic cells were transduced with *pMSCV-Msr1-GFP* or *pMSCV-GFP* retrovirus. GFP<sup>+</sup> K562 cells were sorted out and the expression of MSR1 was measured by FACS.