Figure Legends for Supplementary Figures

Supplementary Figure 1. Immunophenotypic characterization of leukemias in MOL4070LTR infected WT and TG mouse spleen and thymus tissues by flow cytometry using the Gr1 and Mac1 myeloid markers, CD19 and B220 B-lymphocyte markers, CD90 and CD3 T-lymphocyte markers, Ter119 erythroid marker, and Sca1 and CD117 immature cells markers. The top panel represents control tissues from uninfected CREB TG mice. Subsequent panels represent different leukemia subtypes.

Supplementary Figure 2. Flow cytometry gating strategies for HSC progenitors. Gating strategy for cell sorting of lineage negative bone marrow cells to isolate progenitors populations CMP, GMP, MEP, and CLP.

Supplementary Figure 3. Flow cytometry gating strategies for HSCs. Gating strategy for cell sorting of lineage negative bone marrow cells to isolate hematopoietic stem cells LT-HSC, ST-HSC, and MPP.

Supplementary Figure 4. Real-time PCR analysis of known sox4 target gene expression in mouse bone marrow transductants. Real-time PCR analysis of (A) creb, (B) sox4, (C) PU.1, (D) β-catenin, (E) TGFβ, (F) p53, (G) notch in mouse bone marrow cells, transduced with pMIG-R1 vector or the pMIGR1-sox4 construct. WV = WT + vector, WS = WT + sox4, TV = CREB transgenic + vector, TS = CREB transgenic + sox4. P-values are represented above the date bars, *$p<0.05$, **$p<0.01$ ***$p< 0.001$. The data represent two independent experiments performed in triplicate.

Supplementary Figure 5. Binding of Sox4 does not bind to the four other putative sites in the CREB promoter. There are 5 putative Sox4 binding sites in the CREB promoter. We studied whether Sox4 binds to these sites. K562 cells were cross-linked,

harvested, sonicated, and then chromatin was immunoprecipitated with either anti-Sox4 antibody or IgG control antibody as described in the Materials and Methods for Supplementary Figure 5. PCR was performed with primers #2 through 5 against different CREB promoter regions, and the inputs are shown in this figure as PCR positive controls. Unlike primer #1, no ChIP signal was detected in primers #2 through 5, which are negative controls suggesting that the interaction between Sox4 and primer #1 on the CREB promoter is specific.

Materials and methods for Supplementary Figure 5

Chromatin immunoprecipitation was performed mainly according to EZ-ChIP (Millipore) manual. Briefly, K562 or KG1 ($2x10^7$) cells were cross-linked, harvested, and sonicated. Chromatin was precleared with protein A/G beads and then was immunoprecipitated with 5μg of either anti-SOX4 antibody (Santa Cruz) or IgG control antibody. After centrifugation, beads were washed and the protein/DNA complexes were eluted and crosslinks were reversed to free DNA. The immunoprecipitated DNA was then purified and PCR was performed. Input DNA was purified from the precleared chromatin. PCR was performed using normal PCR reaction program with primers against CREB promoter region.

#1: (PCR product 277bp, about 9kb upstream)

For: 5'- TTACCAAGTCTGGATGGAAC - 3'

Rev: 5'- GGTGTGTCATTAACTGTTGAGAGC - 3'

#2: (PCR product 275bp, about 7.5kb upstream)

For: 5'- CAGTTCCGACTCTGTGACATGG - 3'

Rev: 5’- TTGTTGAATGAATGCAATTG - 3’

#3: (PCR product 207bp, about 7kb upstream)

For: 5’- GATCAATTTCCACCAGAGTAG - 3’

Rev: 5’- CCATTCTCTGTTCAGTCACATTGG - 3’

#4: (PCR product 229bp, about 6kb upstream)

For: 5’- TGGCAAATGCTGATAGGTCAAGG - 3’

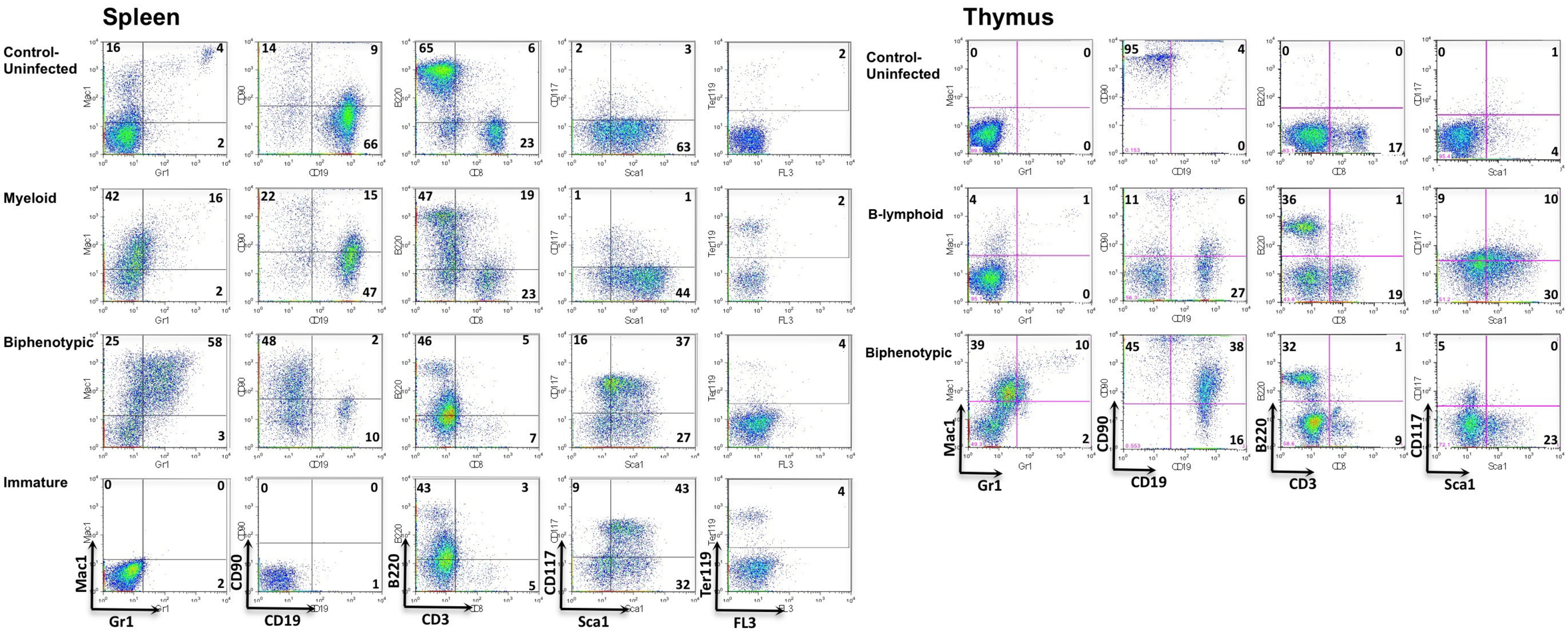
Rev: 5’- CCTTCCAGCTACTGTCCCATTTG - 3

#5: (PCR product 255bp, about 4kb upstream)

For 5’- CGAAGAGAGAATATCCAAGAGAG - 3’

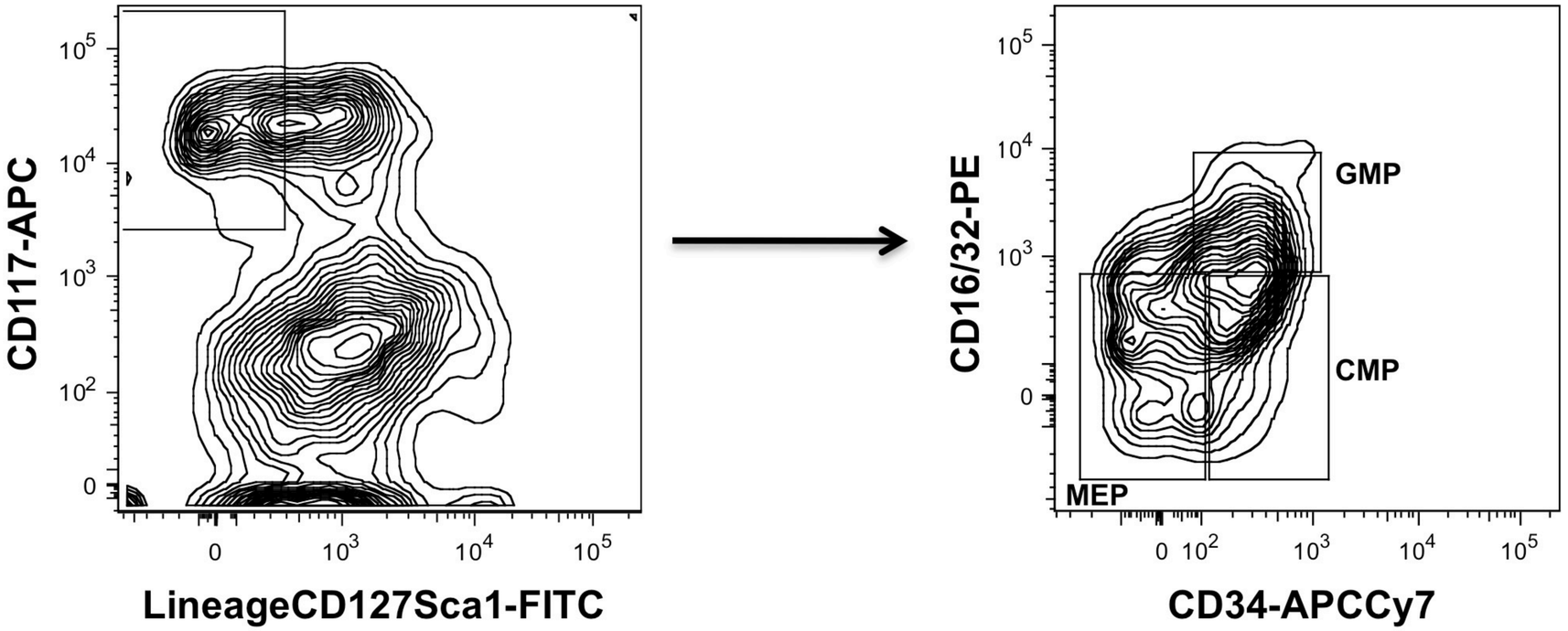
Rev: 5’- CTTCTAACTGGAGGCTAGCTTTCC - 3’

Supplemental Figure 1



Supplementary Figure 2

MYELOID COMPARTMENT SORT CONDITIONS



Immunophenotype

CMP: Lin$^-$ CD127$^-$ Sca1$^-$ CD117^{hi} CD16/32^{lo} CD34$^+$

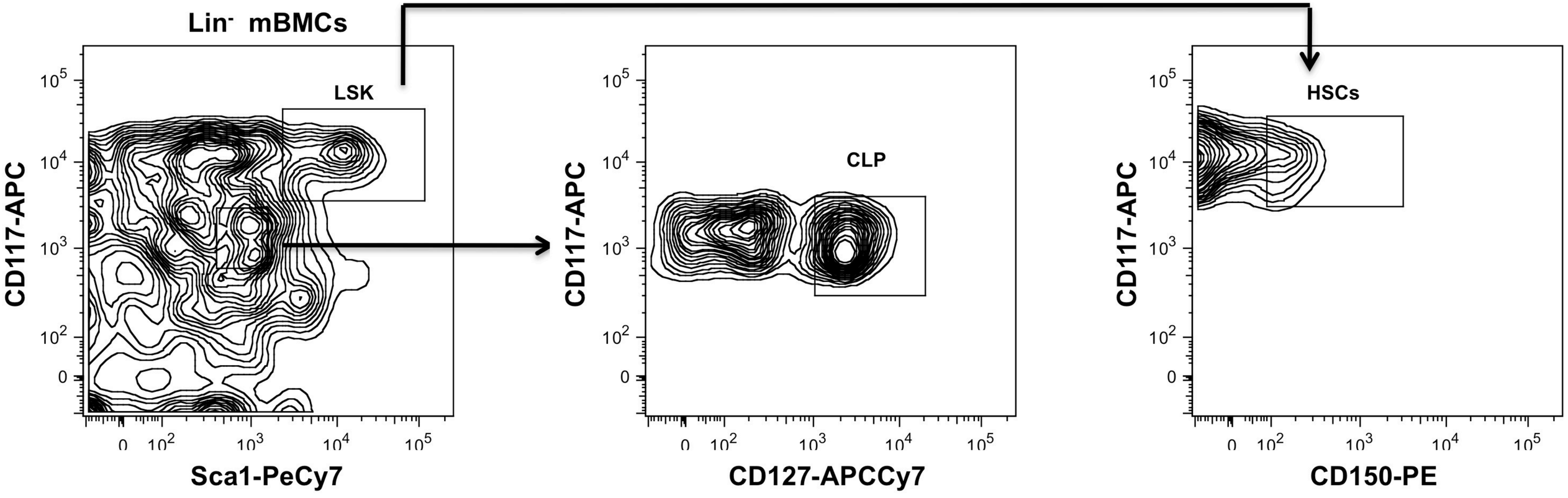
GMP: Lin$^-$ CD127$^-$ Sca1$^-$ CD117^{hi} CD16/32^{hi} CD34$^+$

MEP: Lin$^-$ CD127$^-$Sca1$^-$ CD117^{hi} CD16/32^{lo} CD34$^-$

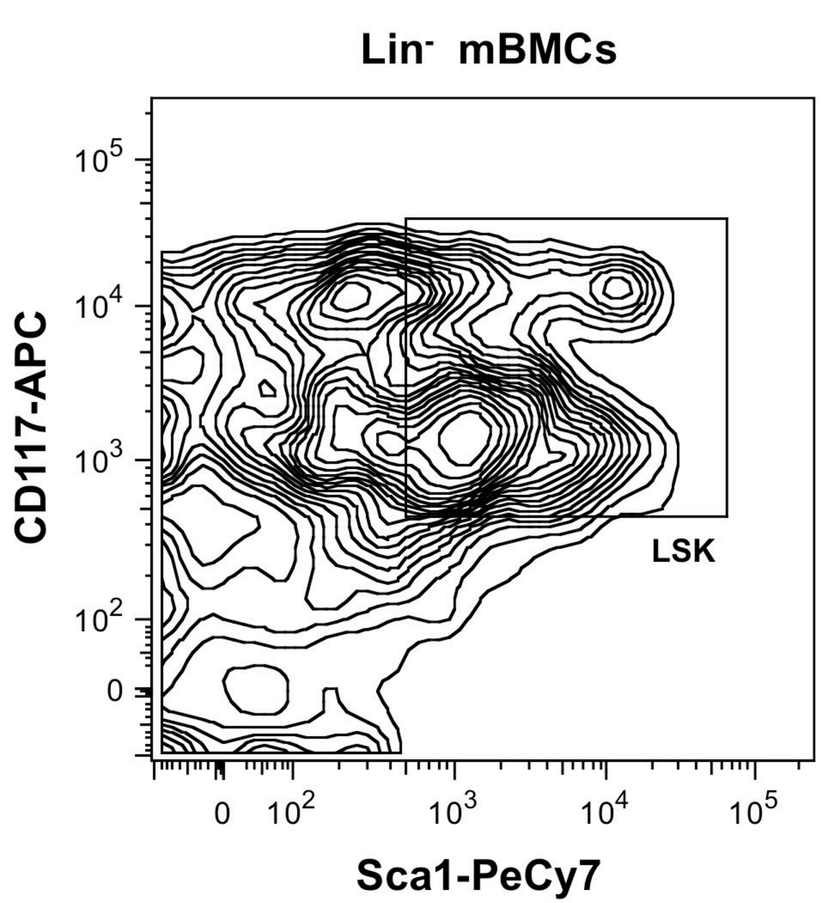
CLP: Lin$^-$ CD127$^+$ Sca1^{Lo} CD117^{lo}

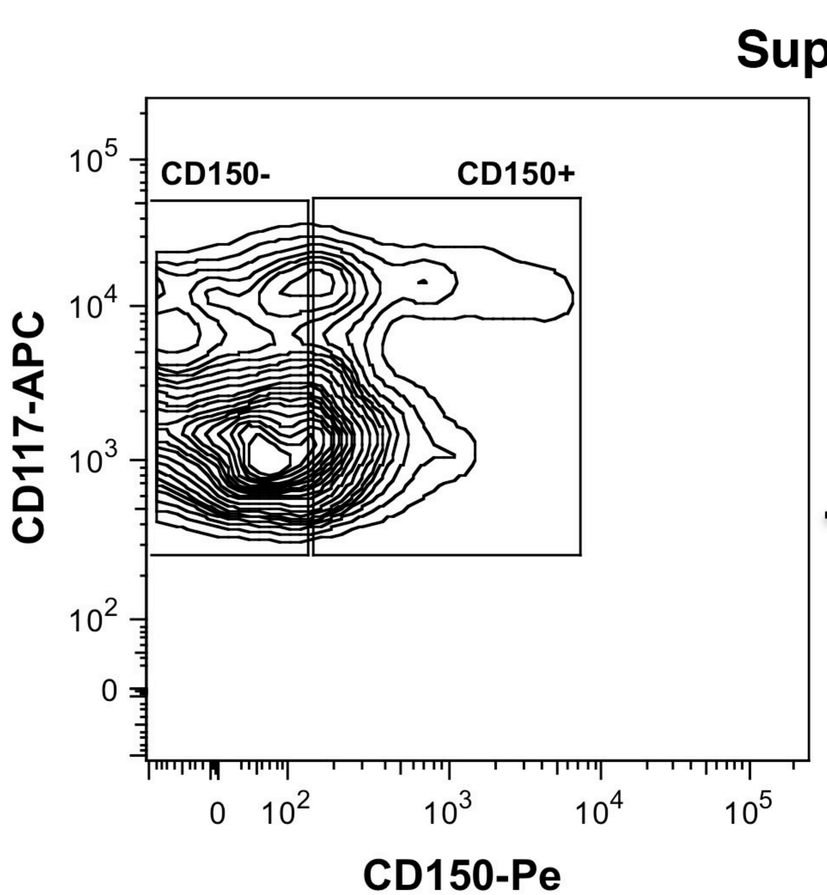
LSK CD150 HSC: Lin$^-$ CD150$^+$ Sca1^{Hi} CD117^{Hi}

LYMPHOID AND LSK CD150 HSC SORT CONDITIONS



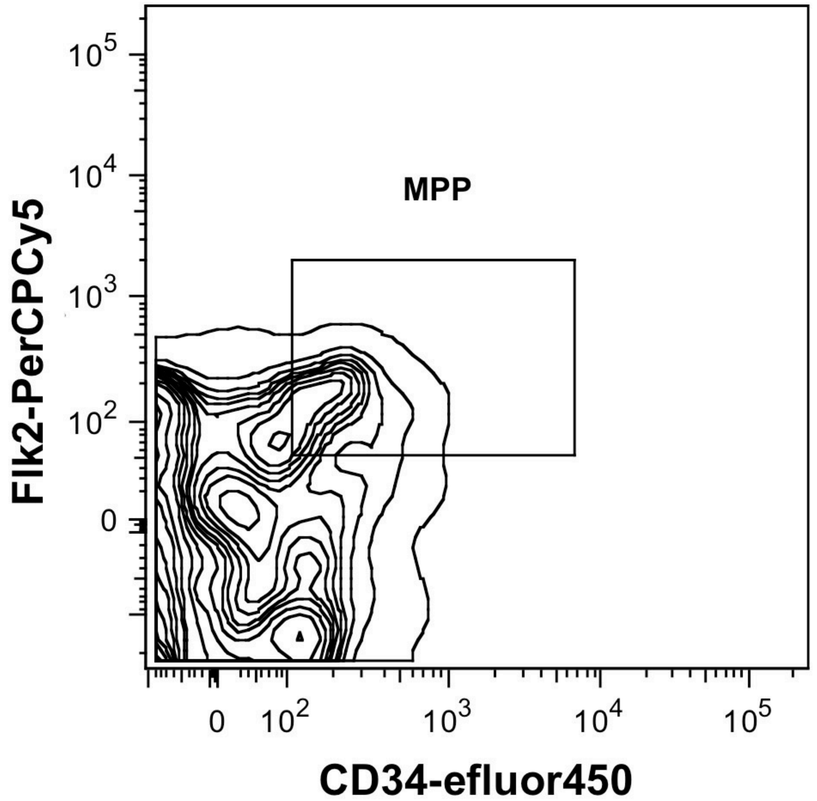
Supplementary Figure 3

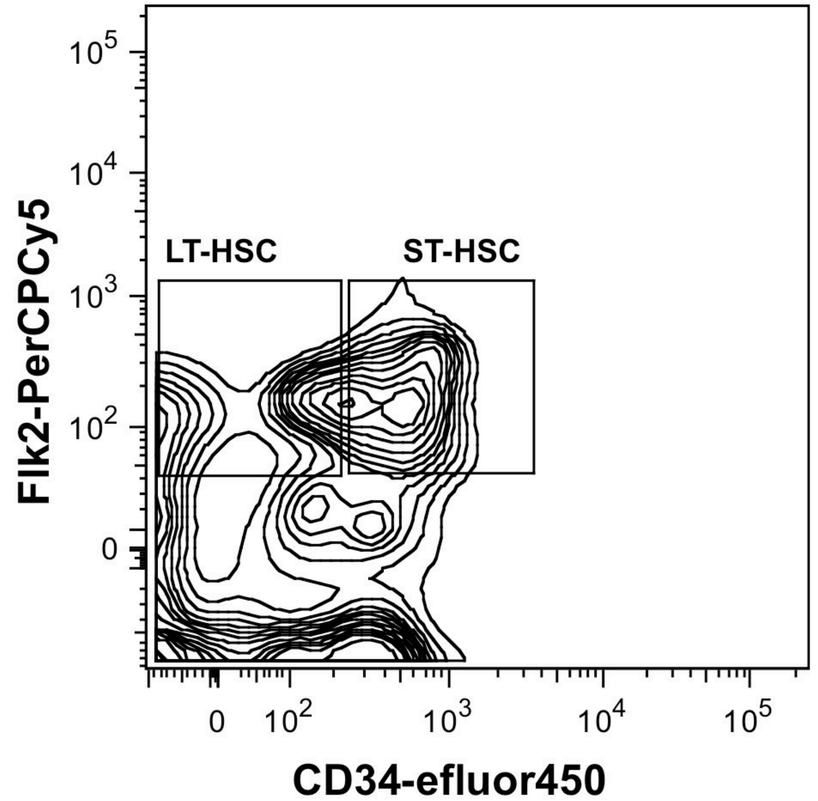




CD150-

CD150+





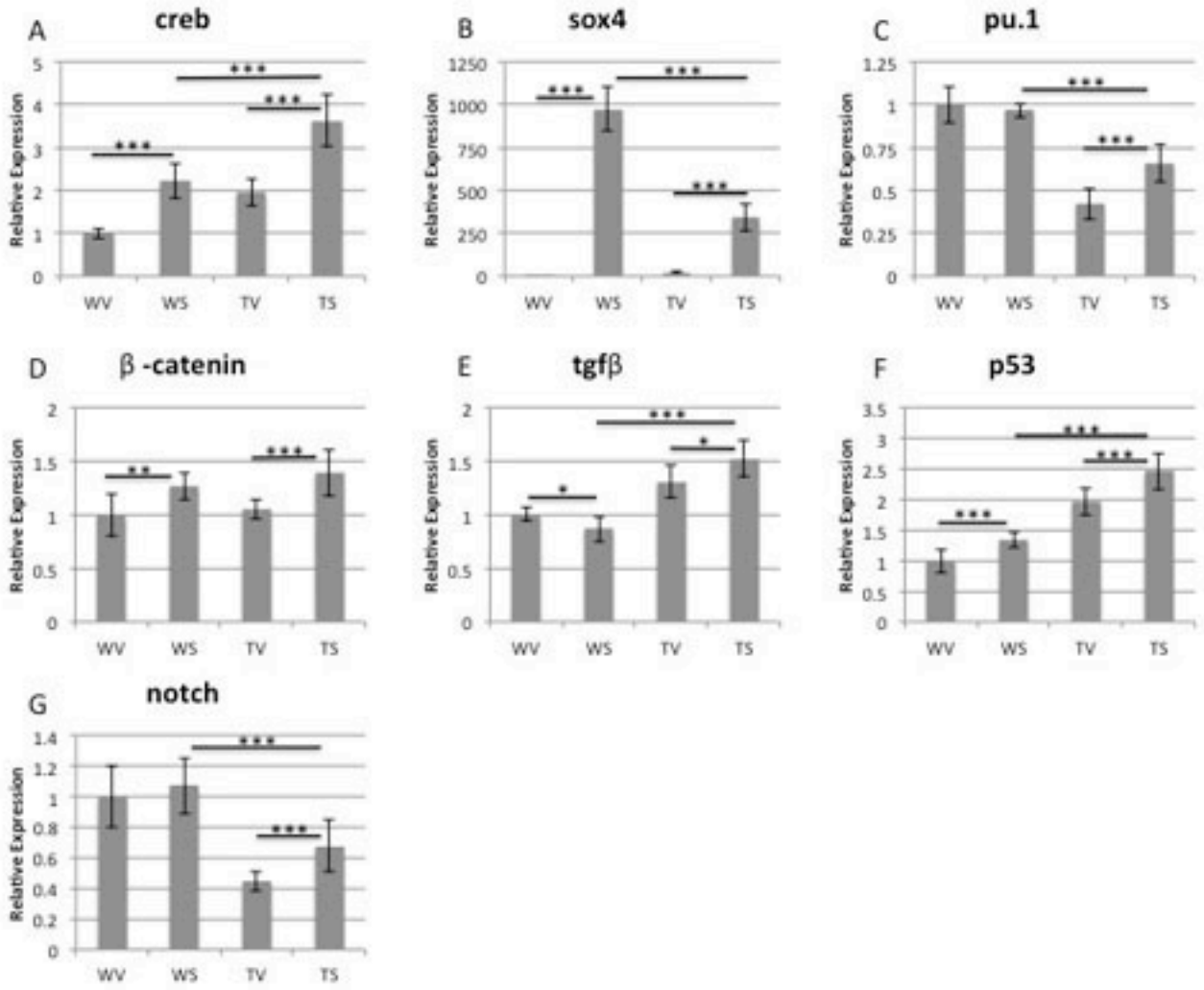
Immunophenotype

MPP: LSK CD34$^+$ Flk2$^+$ CD150$^-$

ST-HSC: LSK CD34$^+$ Flk2$^-$ CD150$^+$

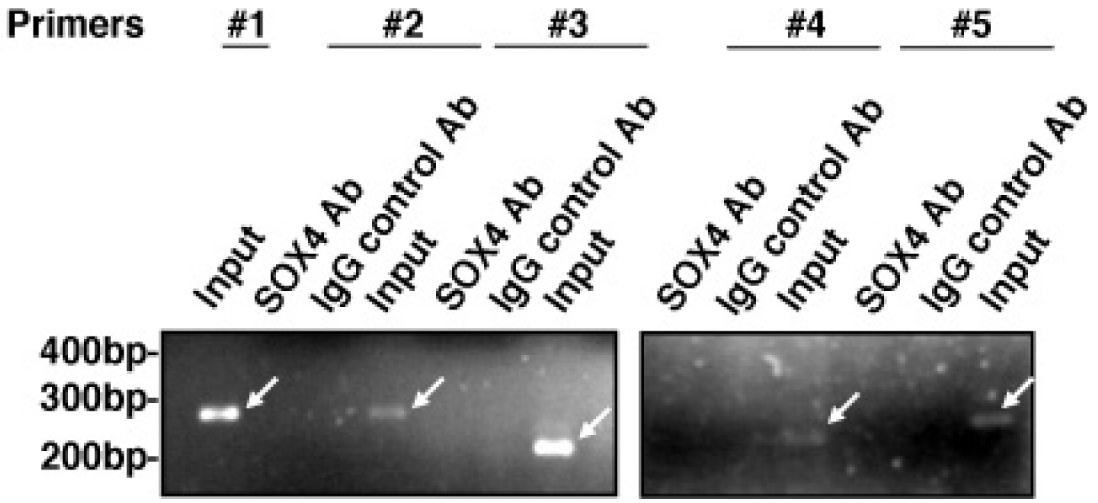
LT-HSC: LSK CD34$^-$ Flk2$^-$ CD150$^+$

Supplementary Figure 4



Supplementary Figure 5

Controls for ChIP experiments



Arrows in the order from left to right indicate PCR products: Input for primers #1: 277 bp; Input for primers #2: 275 bp; Input for primers #3: 207 bp; Input for primers #4: 229 bp; Input for primers #5: 255 bp.