

Supplemental Figure 1. FACS plot to confirm the specificity of antibodies. (A) Representative cell population analyzed. (B) Bone marrow cells were stained with anti mouse APC (Sca1), PE-Cy7 (c-Kit), FITC (LinCD41CD48) and PE (CD150) (C) PCa cells stained with anti mouse APC (Sca1), PE-Cy7 (c-Kit), FITC (LinCD41CD48) and PE (CD150) (D) PCa cells or bone marrow cells stained with anti human APC (Human Leukocyte Antigen - HLA) or FITC (HLA).

Supplemental Figure 2. Representative distribution of various hematopoietic stem cell populations by FACS. (A) $CD150^+ Lin^- CD48^- CD41^- Sca-1^+ cKit^+$ (SLAM HSC) (B) $Lin^- CD48^- CD41^- Sca-1^+ cKit^+$ (LSK HSC).

Supplemental Fig.3 (A) Images of monolayer cultures incubated in osteogenic media for 2 weeks stained with Alizarin Red, showing substantial staining in the rhBMP2 group compared to media control group and compared to BMSCs co-cultured with PCa cells.

(B). Representative microscopic fields of osteoclast formation. RAW264.7 cells were co-cultured in the presence of RANKL (20 ng/ml), PC3, C4-2B or non metastatic control cells for 4 days and stained for TRAP.

Supplemental Fig.4 (A) Representative microscopic fields for osteoblast (OB) formation *in vivo*. Arrow head shows endosteal osteoblasts in H& E stained marrow. **(B)** Osteoclast (OC) formation *in vivo*. Arrow head shows TRAP positive osteoclasts. Original magnification, 60x. Bar 50 μm **(C)** Quantification of OB and OC formation *in vivo*. Number of OB and OC remain unchanged in the presence of PCa.

Supplemental Table 1. Representative PCR cycle number for the genes analyzed. mRNA expression was normalized to the house keeping gene GAPDH.