Supplemental Figure Legends

Supplemental Figure I. Effects of SR-BI deficiency on tissue megakaryocytes and levels of reticulate, 'young' platelets.

A. Bone and spleen samples harvested from wild-type (black bars) and SR-BI KO (white bars) mice were processed for histological analysis as described under Supplemental Methods. Megakaryocytes were identified by size and multinucleated morphology, and their densities (cells per mm^2 tissue) were determined (n=9-11 animals/group, * $P<0.05$). No megakaryopoiesis was seen in similarly-processed liver samples (not shown). **B and C.** Platelets in whole blood were stained with anti-GPIIbIIIa antibody, and 100 ng/ml thiazole orange and the absolute amounts (B, n=8, $P=0.34$) and the percentage (C) of reticulated 'young' platelets (C, n=6-7; ** $P<0.001$) were determined by flow cytometry.

Supplemental Figure II. Effects of endogenous platelet pool size on platelet survival in a murine model of inducible thrombocytopenia.

On day 0, platelets from wild type (WT) mice were isolated, washed, biotinylated and intravenously infused into recipient GP1bα/IL4R transgenic mice that had been infused 30 minutes earlier with anti-IL4 antibody to deplete platelets (white circles) or an isotype control antibody (black circles). The percentage of labeled platelets remaining in the circulation relative to that on day 0 immediately after infusion (100% of control) was determined. Results represent the average of two independent experiments (n=4-5 mice). No significant difference in platelet clearance between the two groups was observed.

Supplemental Figure III. Effects of SR-BI deficiency on platelet size determined by light scattering.

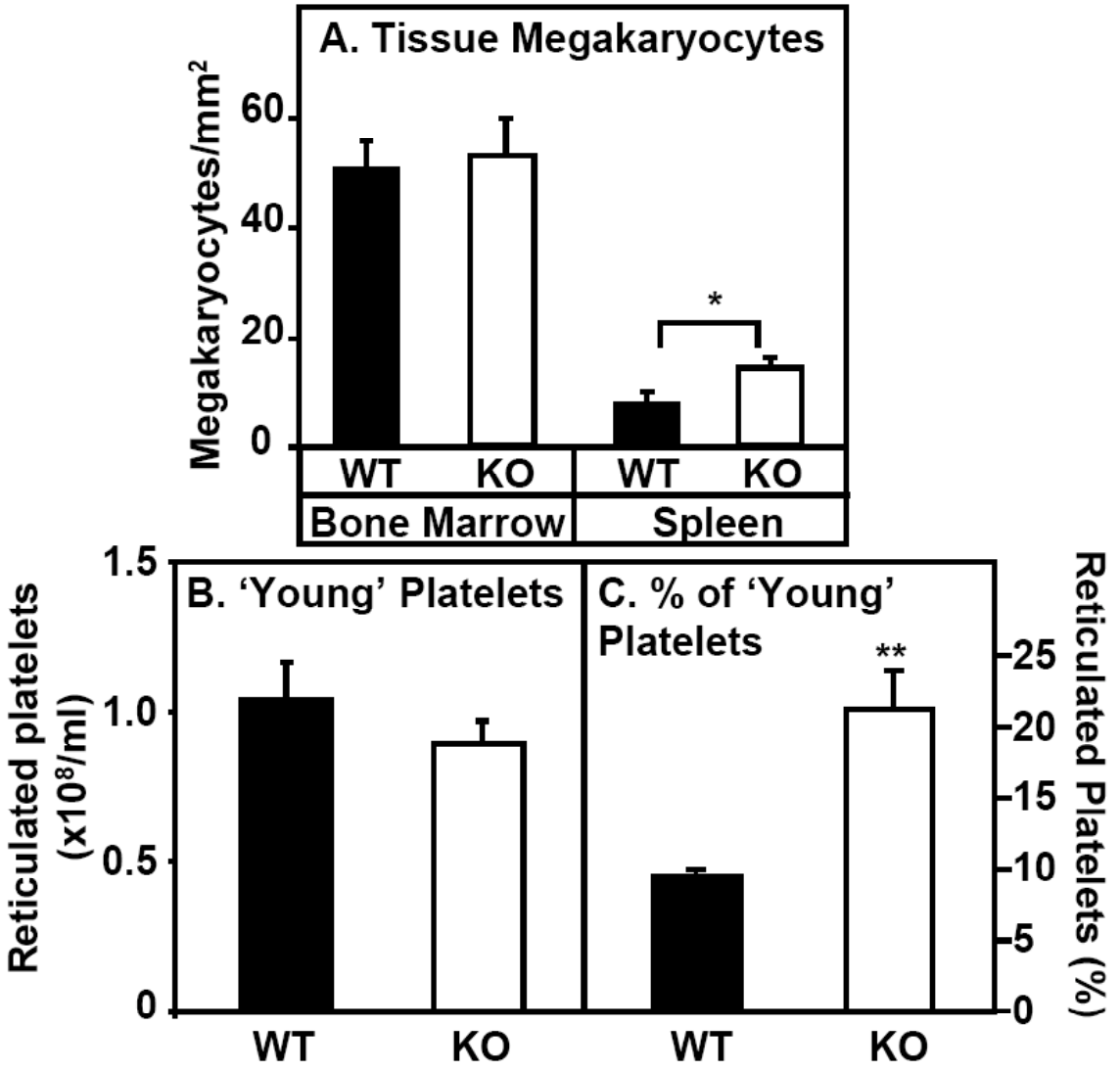
Platelets in whole blood from WT (black bar) or SR-BI KO (white bar) mice were stained with anti-GPIIbIIIa antibody and the amount of forward light scattering, which increases with increasing cell size, was determined using flow cytometry. Platelets from SR-BI KO mice exhibited 1.28±0.04-fold greater forward light scattering than those from WT mice (n=6, **P<0.001). The apparent increase in cell size in platelets from SR-BI KO mice detected by forward light scattering was also reflected in an increase in per cell levels of several cell surface markers determined by flow cytometric analysis. The relative increases in cell surface expression in SR-BI KO vs WT platelets (n=4-7) for three such markers were: GPIbα, 1.44±0.04 (P<0.001); GPIIbIIIa, 1.48±0.09 (P<0.05); and CD9, 1.22±0.05(P<0.05).

Supplemental Figure IV. **Effects of altering SR-BI and PDZK1 expression on platelet survival.**

Wild type mice (WT, dashed line), SR-BI KO mice (KO, dotted line), SR-BI KO mice expressing a primarily liver specific SR-BI transgene (KO-Tg, circles), and PDZK1$^{-/-}$ mice (triangles) were intravenously infused with biotin to label platelets in vivo. Mice were then bled each day for five days and the fractions of platelets labeled with biotin in each sample were determined by flow cytometry (n=4-5).

Supplemental Figure V. Effects of platelet agonist ADP (5 μM) on platelet aggregation.

Platelet-rich plasma from WT (black line) and SR-BI KO (gray line) were isolated and platelet aggregation as a function of time after adding the agonists ADP (5 μM) was measured as increased light transmission in an aggregometer. Aggregation traces from one of two independent experiments are shown.



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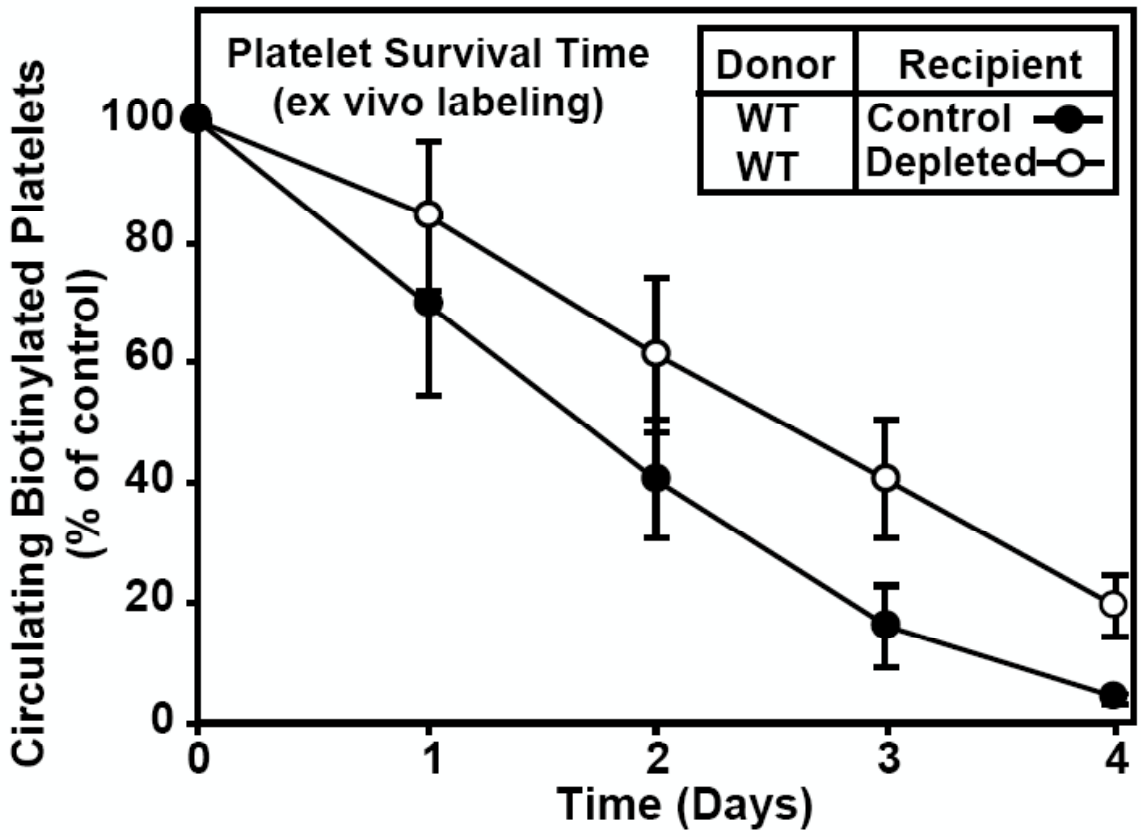

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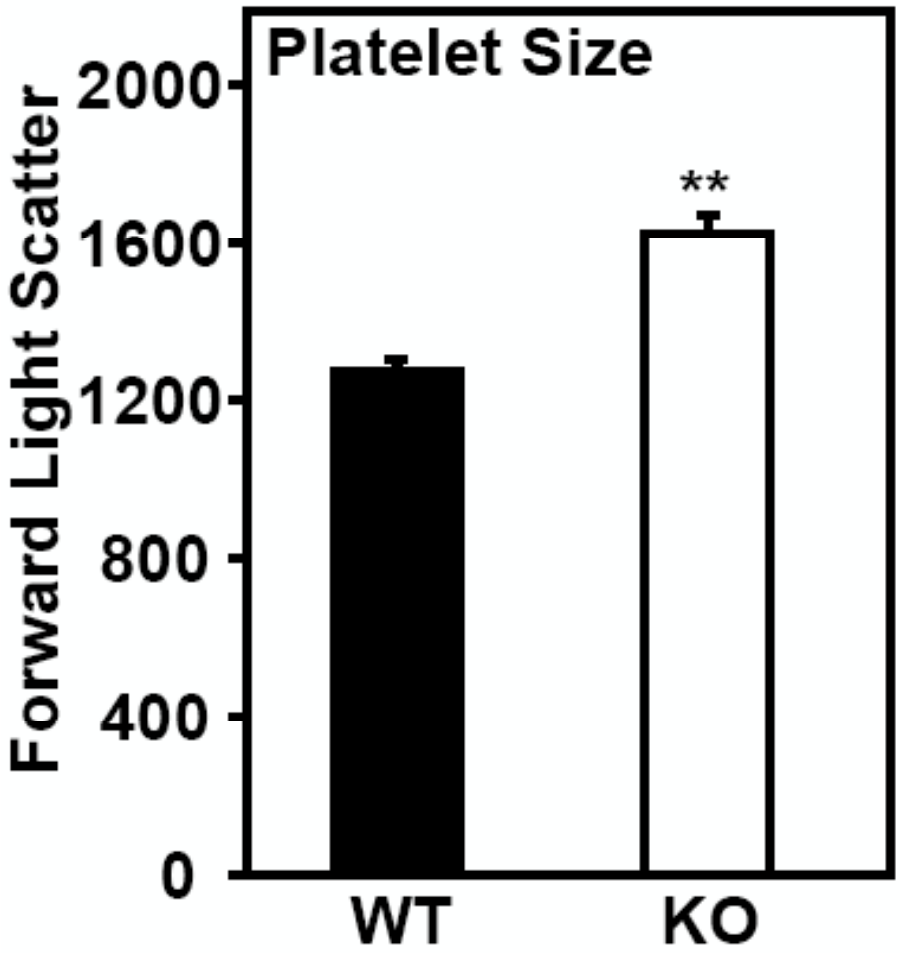

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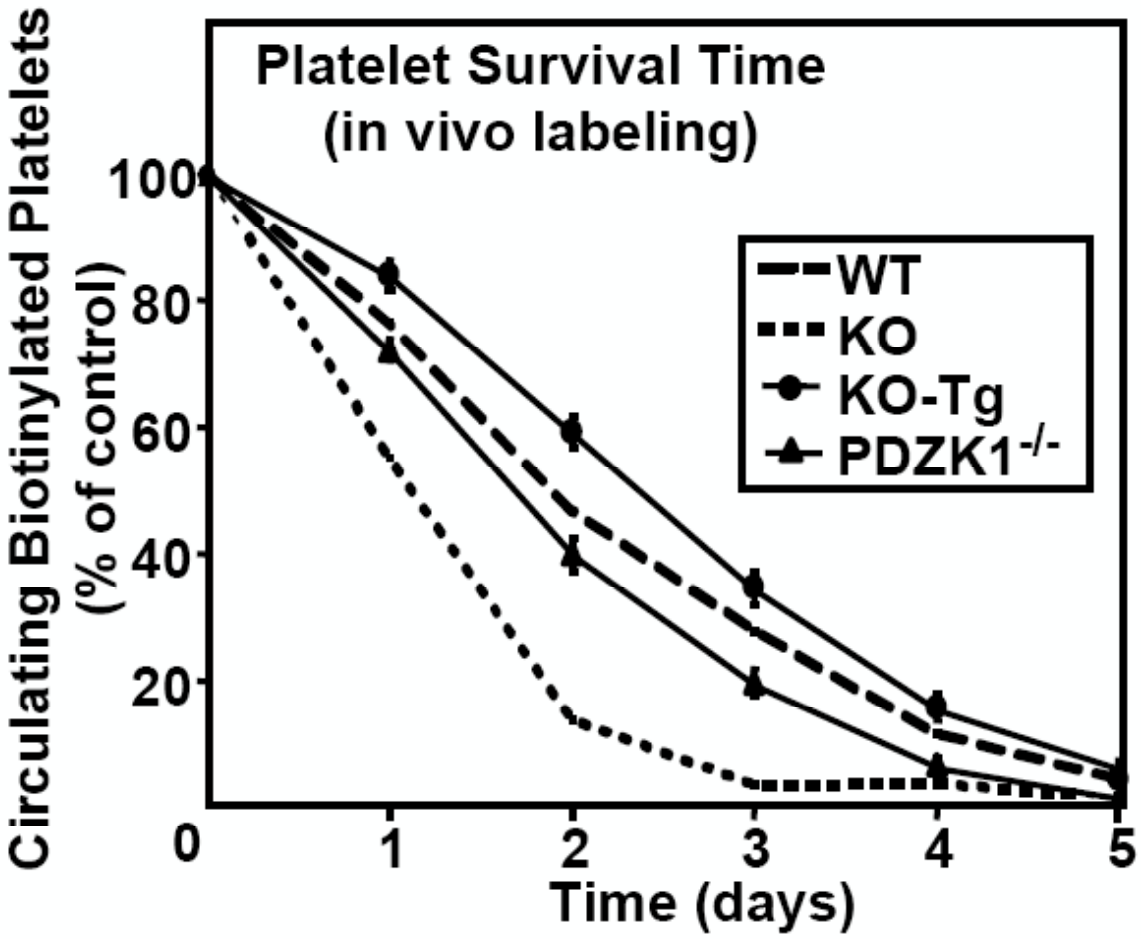

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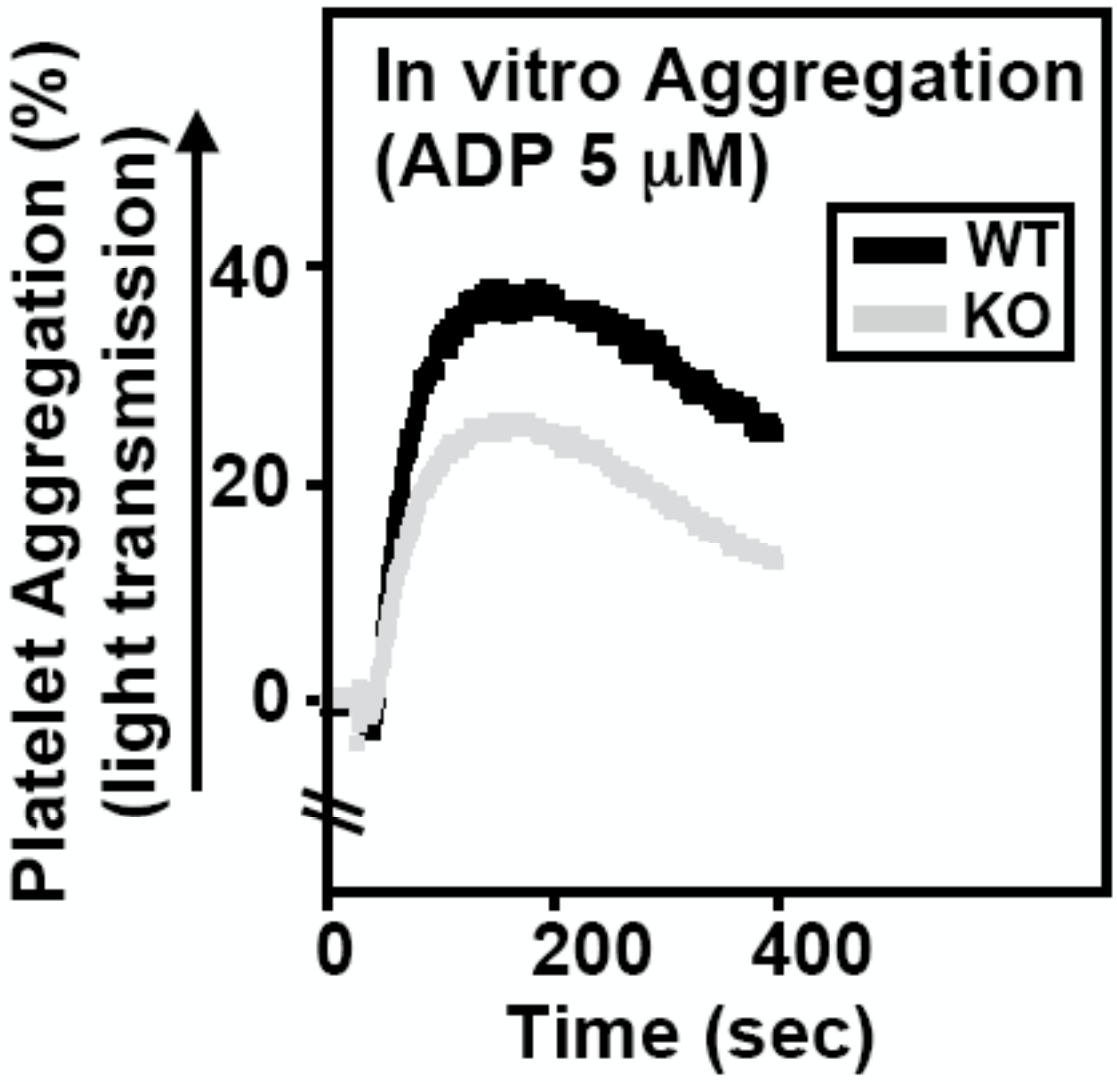

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