

**Figure S1.** *Establishment of embryonic stem cell lines with reduced expression of Filamin A and their differentiation into megakaryocytes and platelets.* (A) shRNA sequence used to knock down filamin A, with corresponding immunoblot (**panel B**) of the ES cell line termed FlnA<sub>Low</sub>. (C) As shown schematically in **Fig. 2A**, CD41-positive cells were isolated from embryoid bodies that had been derived from FlnA<sub>Low</sub> embryonic stem cells and cultured in the presence of TERT-TPO stroma feeder cells for an additional six days. % GFP + FlnA<sub>Low</sub> cells were reduced from 31 % (EB Day 6 CD41 Day 0) to 10% (EB Day 12 CD41 Day 6). (D) FACS analysis of platelet size in the FlnA<sub>Low</sub>, GFP-positive versus the FlnA<sub>Normal</sub>, GFP-negative population.

**Figure S2.** Flow cytometric analysis of size and F-actin content of platelets from wild-type, Tg33, and GPIb $\alpha$ -null mice. After incubation with and FITC-labeled CD41 antibody to mark platelets, whole blood samples were fixed, permeabilized, and stained for F-actin. Relative expression is represented as mean fluorescent intensity, with expression in wild-type platelets arbitrarily set to 100. Note that the increase in F-actin content increases relatively proportional with platelet size.



Figure S2

