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Supplemental information

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Authors

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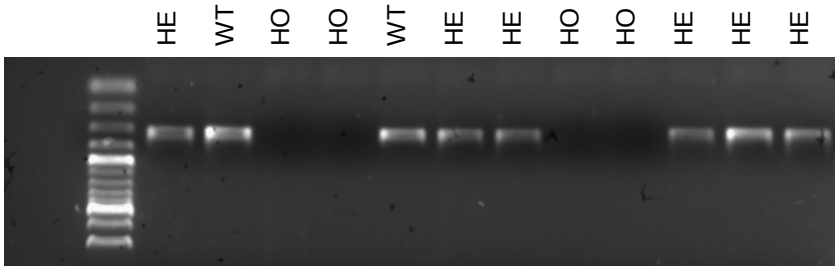
αI 340 Bp



αII 700 Bp

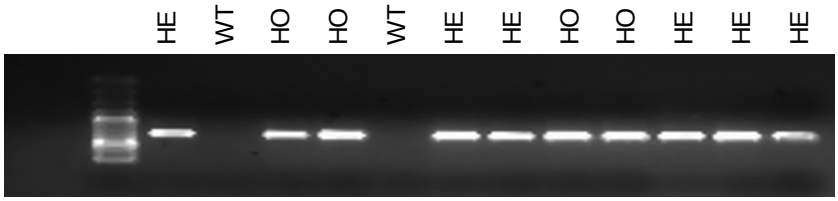


Figure S1. Genotyping by PCR of litter mates: (WT) wild-type mice, (HE) heterozygous and (HO) homozygous knock-in mice. 340-bp indicates presence of αI-spectrin and 700-bp indicates presence αII-spectrin.

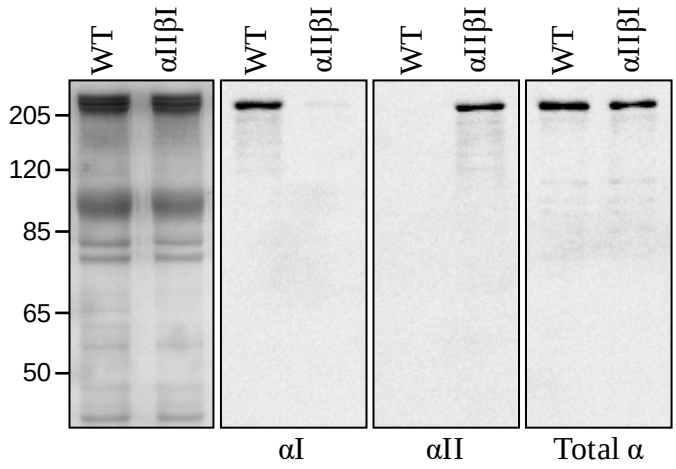


Figure S2. SDS gel electrophoresis and immunoblot analysis of WT and knock-in red cell membranes. Equal protein loadings of ghosts from either WT or αIIβI were separated by SDS gel electrophoresis and either stained with Coomassie brilliant blue (left panel) or transferred to PVDF and probed with antibodies specific for αI, αII or total α-spectrin as indicated. The positions of standard marker proteins (kDa) are indicated on the left edge.

	WT (n=9)	αIIβI (n=7)
WBC (x10^3/µl)	7.76 ± 1.57	7.07 ± 3.45
RBC (x 10^6/µl)	9.93 ± 0.36	8.69 ± 0.21 ***
HGB (g/dl)	14.28 ± 0.49	12.9 ± 0.41 ***
HCT (%)	44.92 ± 1.81	40 ± 0.96 ***
MCV (fl)	45.32 ± 0.73	46 ± 0.43 *
MCH (pg)	14.38 ± 0.17	14.84 ± 0.16 ***
MCHC (g/dl)	31.77 ± 0.5	32.26 ± 0.5
CHCM (g/dl)	30.81 ± 0.32	31.27 ± 0.71
CH (pg)	13.93 ± 0.15	14.39 ± 0.23 **
RDW (%)	13.46 ± 0.99	13.03 ± 0.31
HDW (%)	1.81 ± 0.13	1.94 ± 0.05 *
PLT (x 10^3/µl)	1217.56 ± 216.16	1233.57 ± 273.23
MPV (fl)	7.08 ± 0.73	7.03 ± 0.96
Retic (%)	3.17 ± 0.36	4.29 ± 0.58 **

Table S1. The hematological parameters of WT (n=9 mice) and αIIβI (n=7 mice) red blood cell samples as measured by AVIDA 120. WBC indicates white blood cell count; RBC red blood cell count; HGB, hemoglobin; HCT, hematocrit; MCV, mean corpuscular volume; MCH, mean corpuscular hemoglobin; MCHC, mean corpuscular hemoglobin content; CHCM, corpuscular Hemoglobin concentration mean; CH, corpuscular hemoglobin content; RDW, red cell distribution width; HDW, hemoglobin distribution width; PLT, platelet count; MPV, mean platelet volume; Retic, reticulocyte count. Data is expressed as the mean ± SD (standard deviation), $P \leq 0.05$, ** $P \leq 0.01$,*** $P \leq 0.001$).

aIIbI-FIMD.avi

Movie S1 (separate file). Fluorescence imaged micro-deformation: Video of the captured image sequence of the micropipette aspirated αIIβI RBC as the buffer is exchanged adjusting the RBC volume and thereby changing the aspiration tongue length.