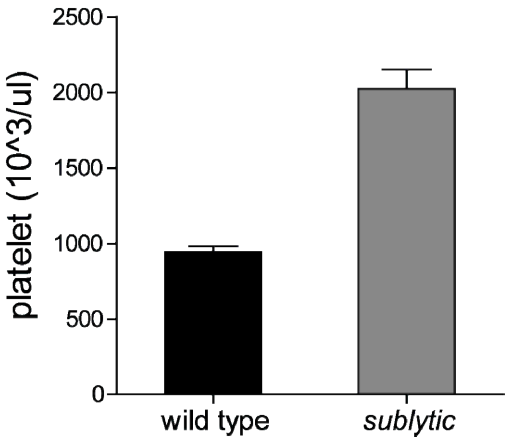

Figure S1. Platelet counts was elevated concomitant with reticulocytosis observed in *sublytic* mouse

Both male and female mice at 5 weeks of age were used for CBC analysis. N=9 for both wild type and *sublytic* mice.

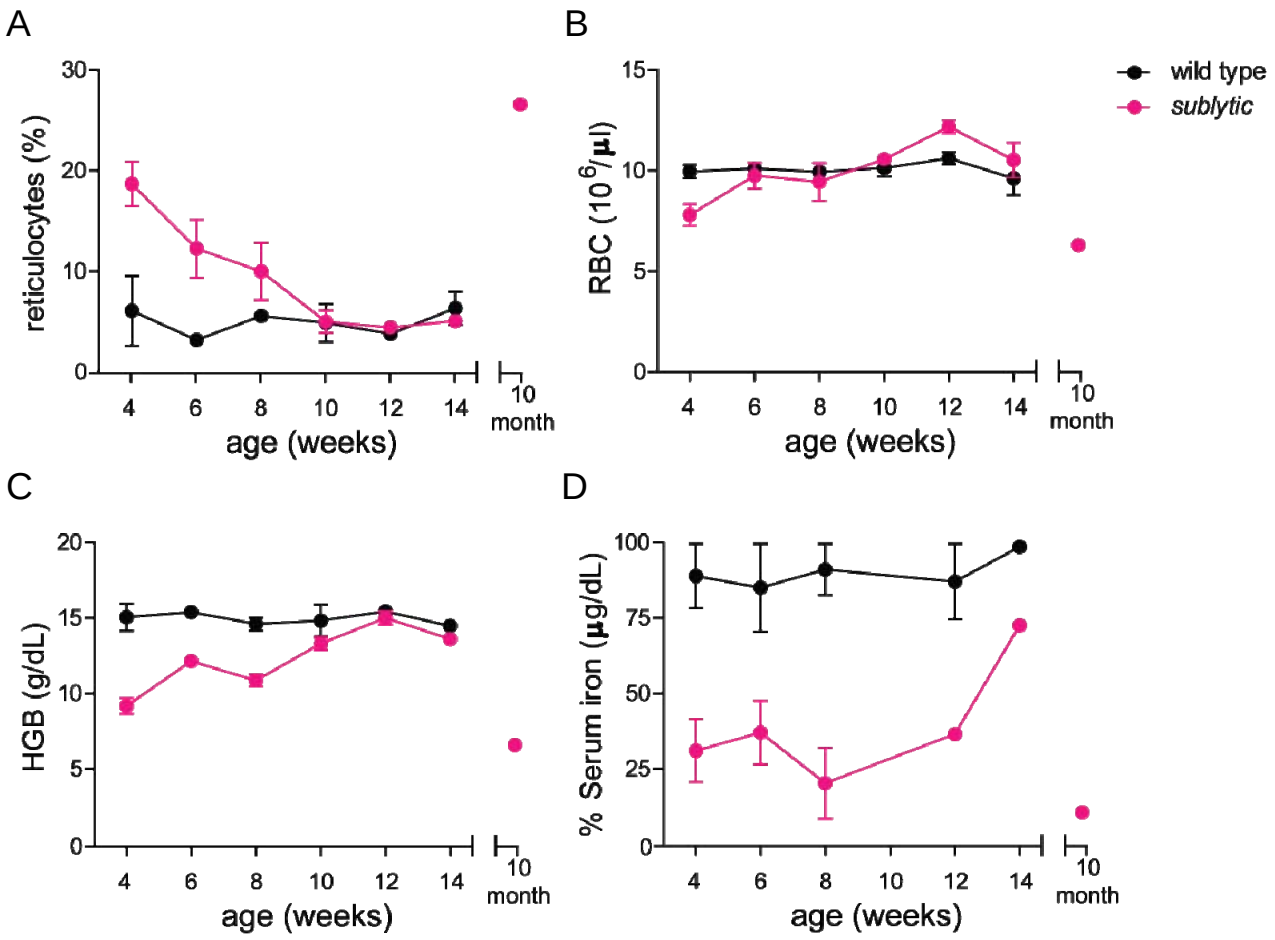

Figure S2. The over-time changes of hematological and serum iron values in *sublytic* mice

This data was generated by combining results from three separate groups of *sublytic* homozygotes (n=2 to 3) and corresponding wild type littermates (n= 2 to 3). In each group, mice were bled once every 4 weeks and subjected to complete blood count and serum iron measurement. The data for one 10-month-old *sublytic* homozygote, which developed a second round of severe anemia is also shown. Data represent mean ± SD.

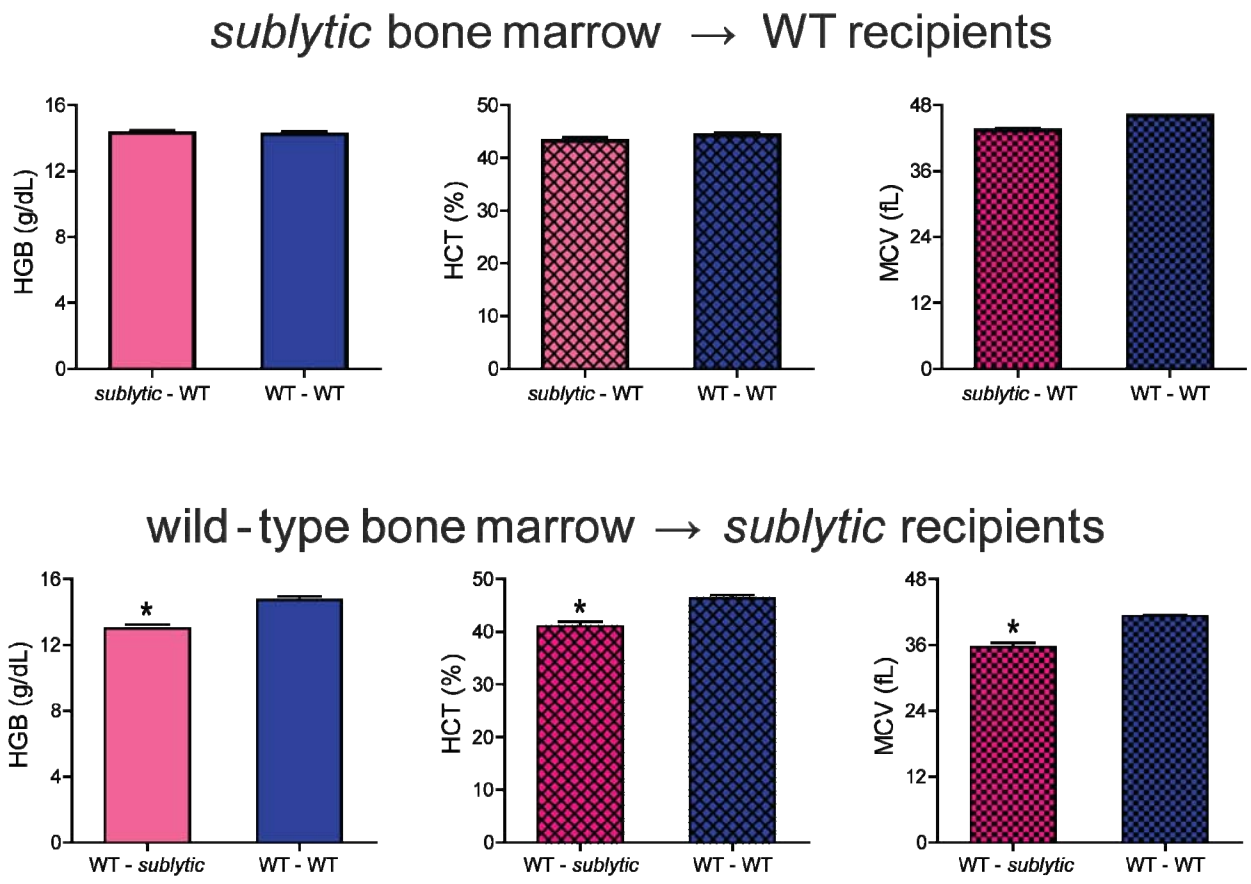

Figure S3. The *sublytic* phenotype is conferred by the non-hematopoietic compartment
When homozygous *sublytic* marrow was transferred into lethally irradiated wild type recipient mice (n=5), the reconstituted chimeric mice were all normal in RBC indices; on the contrary, when transferring wild type marrow into lethally irradiated homozygous *sublytic* recipients (n=5), the reconstituted chimeric mice all developed microcytic anemia. Similarly reduced hemoglobin, hematocrit and MCV value were observed in wild type marrow-reconstituted *sublytic* mice and non-chimeric *sublytic* mice. Error bars represent SEM.

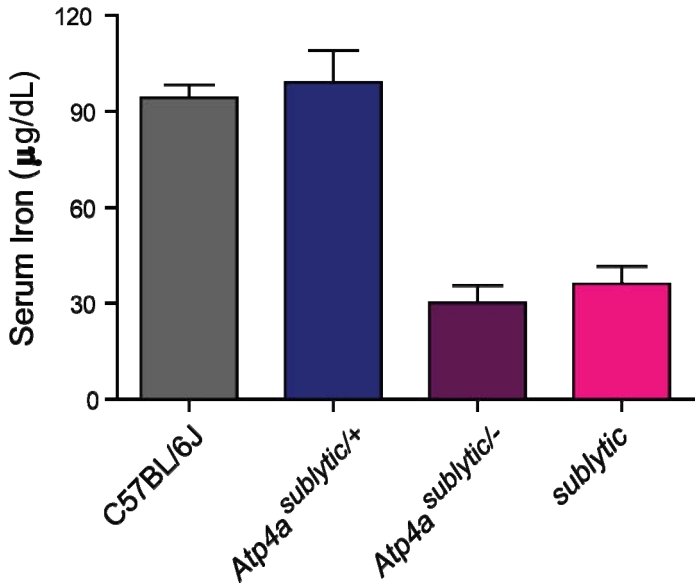

Figure S4. *Atp4a*$^{sublytic/-}$ mice showed decreased serum iron levels
Serum iron concentration was measured in *Atp4a*$^{sublytic/-}$ (n=5) and *Atp4a*$^{sublytic/+}$ littermates (n=2) at 9 weeks of age, along with age-matched C57BL/6J wild type mice (n=3) and *sublytic* homozygotes (n=2). *P*=0.0571, C57BL/6J vs. *Atp4a*$^{sublytic/-}$, Student's *t* test.

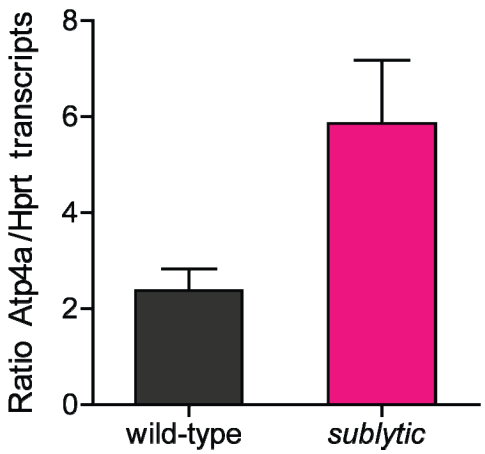

Figure S5. *Atp4a* transcript level was elevated in *sublytic* mice
Total RNA was isolated from stomach tissue of wild type and *sublytic* mice and subjected to first-strand cDNA synthesis. The transcript level of *Atp4a* was then surveyed by quantitative PCR with *Hprt* as endogenous control for gene expression. N=3 for both wild type and *sublytic* mice.

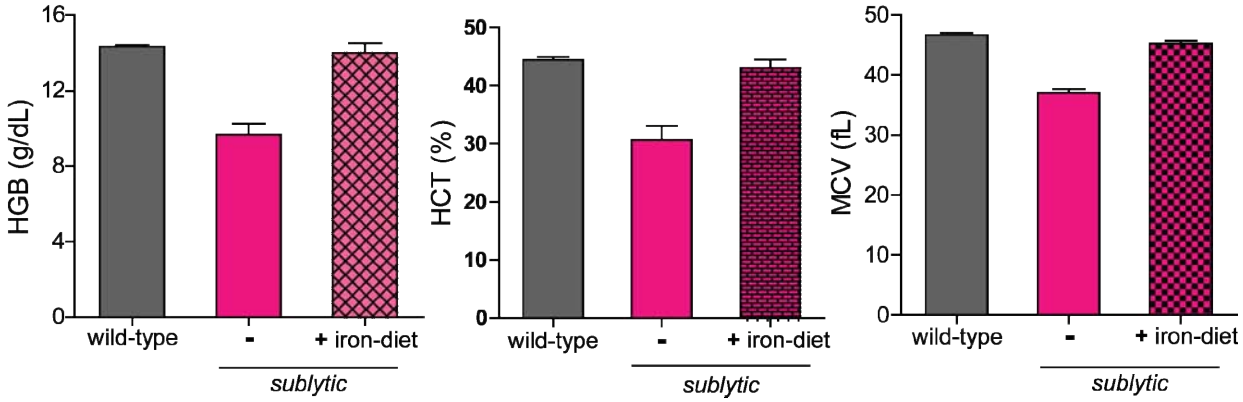

Figure S6. Anemia can be rescued by iron repletion in *sublytic* mice
Mice were fed with a high-iron diet (regular rodent diet supplemented with 2% carbonyl iron) for one month, and then red cell indices were evaluated. N=4 *sublytic* mice.

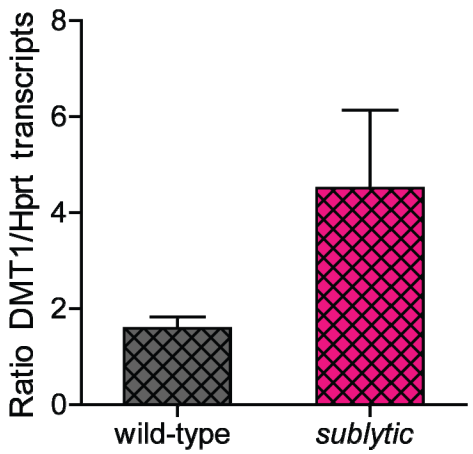

Figure S7. *DMT1* transcript was upregulated in *sublytic* mice
Total RNA was isolated from duodenum tissue of wild type and *sublytic* mice and subjected to first-strand cDNA synthesis. The transcript level of *DMT1* was then evaluated by quantitative PCR with *Hprt* as endogenous control for gene expression. N=3 for both wild type and *sublytic* mice.

Mouse ID	RBC (M/ml)	HGB (g/dL)	MCV (fL)	MCH (pg)	RDW (%)	Serum Iron (µg/dL)
			On regular diet			
dtF1	8.21	12.8	48.0	15.6	18.0	205
dtF2	8.33	13.2	49.0	15.9	17.3	176
dtM1	8.02	12.6	49.0	15.7	17.7	80
dtM2	8.23	12.3	47.0	15.0	19.0	143
			on iron-deficient diet			
dtF1	9.08	10.8	38.0	11.9	16.6	41
dtF2	9.74	11.0	34.0	11.3	14.5	40
dtM1	10.51	12.3	36.0	11.7	17.3	14
dtM2	6.14	8.4	38.0	13.6	14.7	27

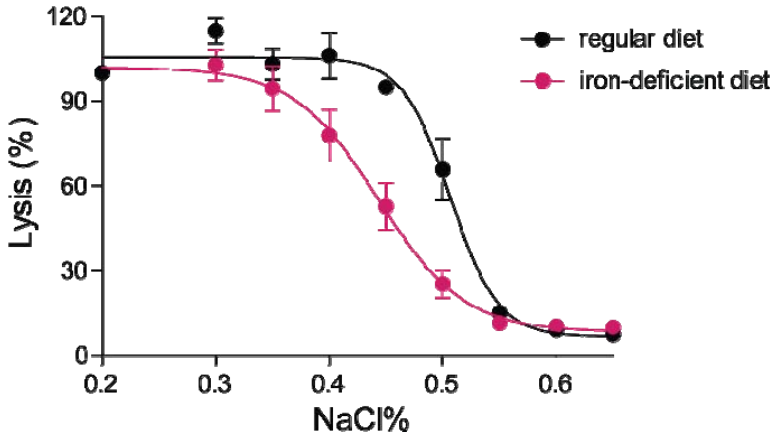

Figure S8. Microcytic red blood cells show reduced osmotic fragility
Wild type C57BL/6J mice were maintained on an iron deficient diet from 5 weeks of age for 40 days and rendered iron deficient and developed hypochromic microcytic anemia. Red blood cells were then isolated and subjected to lysis with hypotonic solution.