Stem Cell Reports, Volume *16*

Supplemental Information

Developmental Stage-Specific Changes in Protein Synthesis Differentially Sensitize Hematopoietic Stem Cells and Erythroid Progenitors to Impaired Ribosome Biogenesis

Jeffrey A. Magee and Robert A.J. Signer

SUPPLEMENTAL INFORMATION

Developmental stage-specific changes in protein synthesis differentially sensitize hematopoietic stem cells and erythroid progenitors to impaired ribosome biogenesis

Jeffrey A. Magee[1] and Robert A.J. Signer[2,3]

[1]*Division of Hematology and Oncology, Department of Pediatrics, and Department of Genetics, Washington University School of Medicine, St. Louis, MO, 63110 USA.*
[2]*Division of Regenerative Medicine, Department of Medicine, Moores Cancer Center, University of California San Diego, La Jolla, CA, 92093 USA.*
[3]Correspondence:
Robert A.J. Signer
UC San Diego Moores Cancer Center
3855 Health Sciences Drive
La Jolla, CA 92093-0652
USA
Tel: 858-534-0732
Email: rsigner@ucsd.edu
Twitter: @SignerLab

Supplemental Figures and Legends

FIGURE S1

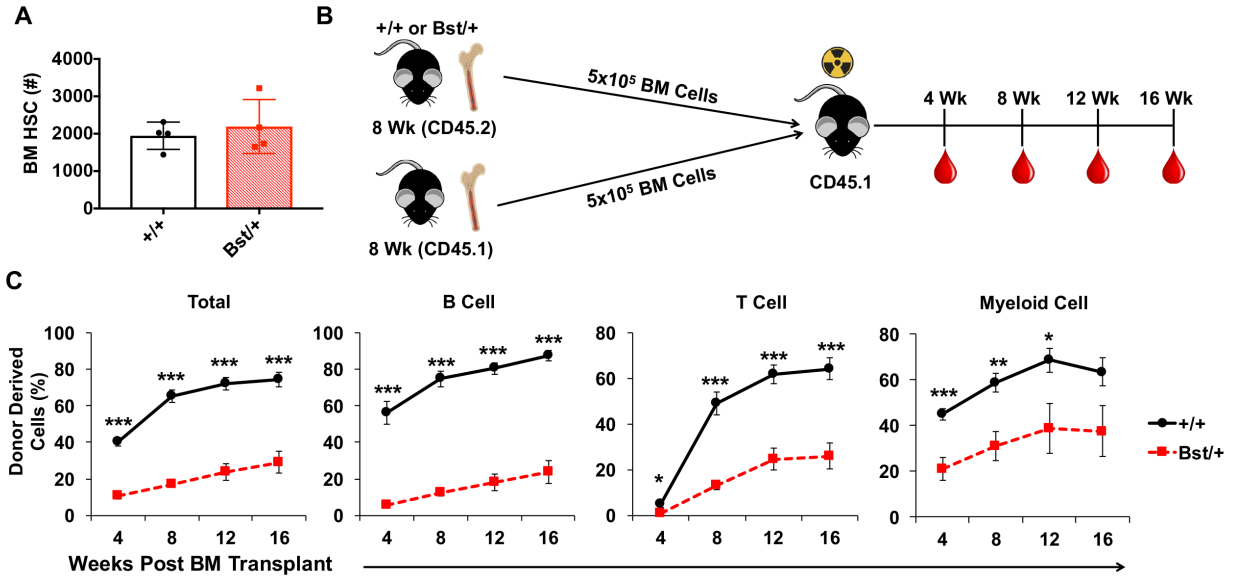

Figure S1. Young adult *Rpl24*$^{Bst/+}$ HSCs have impaired long-term multilineage reconstituting activity. Related to Figure 3. (A) Absolute number of HSCs in young adult *Rpl24*$^{Bst/+}$ and control mice (1 femur + 1 tibia/mouse; N=4 mice/genotype). (B) Diagram of experimental strategy to test long-term multilineage reconstituting activity of young adult *Rpl24*$^{Bst/+}$ HSCs. (C) Donor cell engraftment when 5x10^5 *Rpl24*$^{Bst/+}$ (Bst/+) or littermate control (+/+) BM cells were transplanted with 5x10^5 recipient-type young adult BM cells into irradiated mice. Total hematopoietic, B-, T- and myeloid cell engraftment is shown 4, 8, 12 and 16 weeks after transplantation (N=5 recipients/genotype). Data represent mean ± SD (A) or SEM (C). Statistical significance was assessed using a two-tailed Student's t-test (*P<0.05, **P<0.01, ***P<0.001).

FIGURE S2

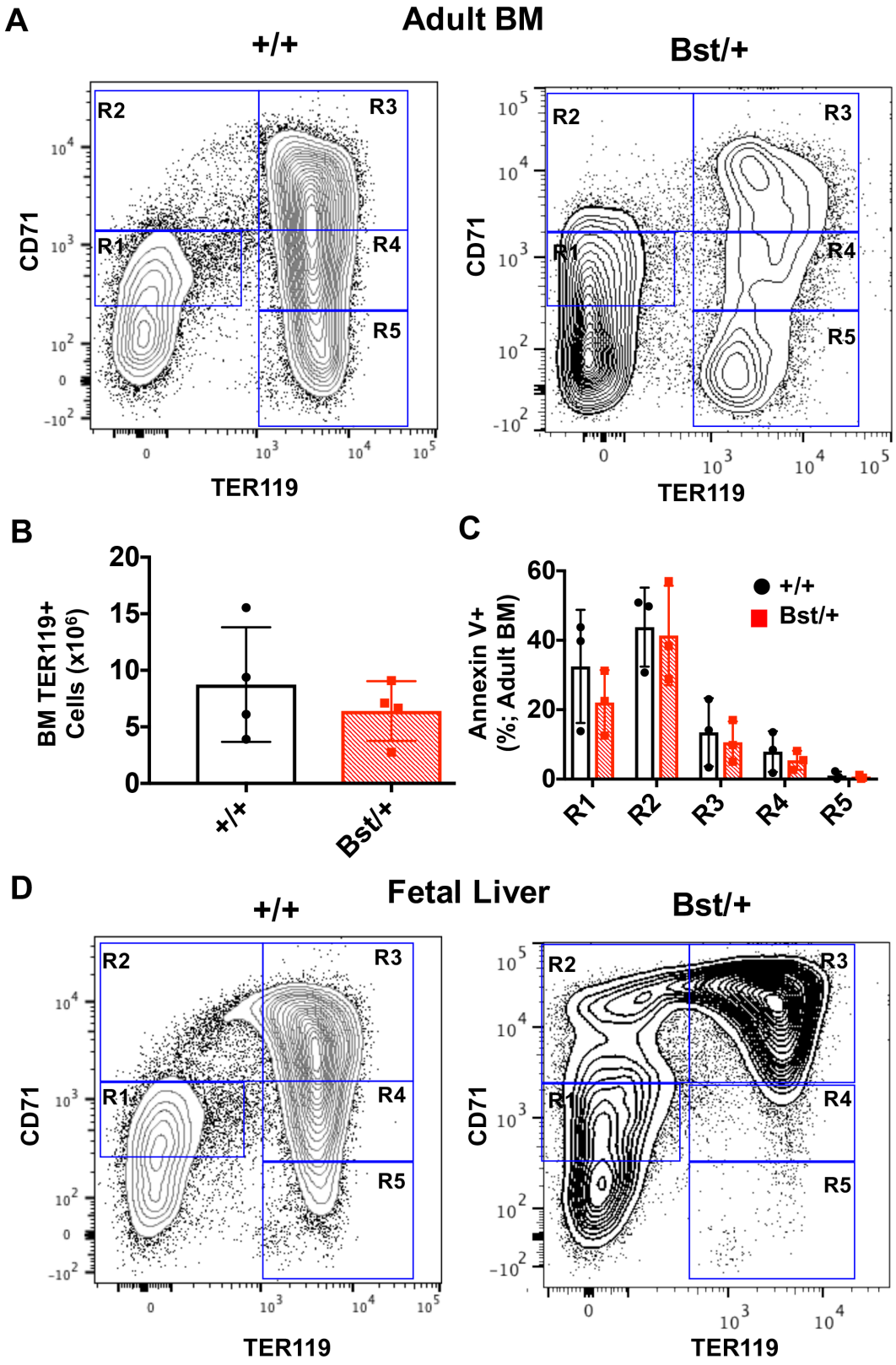
A
Adult BM
+/+
Bst/+
R1
R2
R3
R4
R5
CD71
TER119
B
BM TER119+ Cells (x10⁶)
+/+
Bst/+
C
Annexin V+ (%; Adult BM)
+/+
Bst/+
R1
R2
R3
R4
R5
D
Fetal Liver
+/+
Bst/+
R1
R2
R3
R4
R5
CD71
TER119

Figure S2. The *Rpl24*$^{Bst/+}$ mutation impairs fetal but not adult erythroid differentiation. Related to Figure 4. (A) Representative flow cytometry plots of R1-R5 erythroid lineage cells in *Rpl24*$^{Bst/+}$ (Bst/+) or control (+/+) young adult BM. (B) Number of TER119^{+} cells in *Rpl24*$^{Bst/+}$ (Bst/+) or control (+/+) young adult *Rpl24*$^{Bst/+}$ (Bst/+) or control (+/+) BM (1 femur + 1 tibia/mouse; n=4 mice/genotype). (C) Frequency of erythroid progenitors that are Annexin V^{+} in young adult *Rpl24*$^{Bst/+}$ (Bst/+) or control (+/+) BM (N=3 mice/genotype). (D) Representative flow cytometry plots of R1-R5 erythroid lineage cells in *Rpl24*$^{Bst/+}$ (Bst/+) or control (+/+) E15.5 fetal liver. Data represent mean ± SD. Statistical significance was assessed using a two-tailed Student's t-test.