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## **Supplemental Information**

## **βT87Q-Globin Gene Therapy Reduces Sickle**

Hemoglobin Production, Allowing for Ex Vivo

## Anti-sickling Activity in Human Erythroid Cells

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Figure S1. Sickling of HbA/HbS (AS) or HbS/HbS (SS) human red blood cells, and sHUDEP-2

cells with/without  $\beta$ T87Q-globin expression under deoxygenated conditions.



**Figure S2.**  $\alpha$ -globin RNA transcripts in  $\beta$ T87Qglobin vector transduced sHUDEP-2 cells. The data were normalized using rRNA RNA levels (n=3), *P*<0.05.





**Figure S3.** Confirmation of RNA-Seq data by qPCR in (**A**) CD34+, and (**B**) sHUDEP-2 cells. Reference genes were selected from genes differentially expressed in either  $\beta$ T87Q-CD34+ or  $\beta$ T87Q-sHUDEP-2 cells (n=3), \**P*<0.05, and \*\**P*<0.05. (**C**) Principal Component Analysis (PCA) for RNA-Seq data.