Additional file and Supplemental information

CH02 peptide promotes CD34+ umbilical cord blood hematopoietic stem cells ex vivo expansion

Yiqi Yang[1,2 #], Bihui Zhang[1 #], Junye Xie[1], Yuling Cai[1], Jia Liu[2] , Yibo Zhang[1], Jieqiong Cao[1], Zijian Su[1], Jinting Zhang[1], Qilin Meng[1], Jingsheng Li[1], Fu Li[1], Zhaodong Zhai[1], Bin Liu[3], An Hong[1,2 *], Xiaojia Chen[1,2 *]

1 Institute of Biomedicine & Department of Cell Biology, College of Life Science and Technology, Jinan University; Guangdong Province Key Laboratory of Bioengineering Medicine; Guangdong Provincial biotechnology drug & Engineering Technology Research Center; National Engineering Research Center of Genetic Medicine, Guangzhou, China

2 The First Affiliated Hospital, Jinan University, Guangzhou, China

3 Guangzhou Red Cross Hospital, Jinan University, Guangzhou, China

* Correspondence: tchenxj@jnu.edu.cn (X.C.); tha@jnu.edu.cn (A.H.)

\# These authors contributed equally to this work

Supplementary material titles and legends

Additional file 1: Table S1. Information of Cord blood samples and frequency of CD34+ cells after enrichment.

Additional file 2: Figure S1. The frequency of CD34+ cells after enrichment by flow cytometric analysis.

Additional file 3: Figure S2. Mass spectrometry analysis showed the characteristics of CH02 peptide.

Additional file 4: Figure S3. Target capture analysis showed the potential targets of CH02. (A) MS Score result showed the potential target proteins bind to CH02. (B) Relative quantitative graph shown FLT3 and CH02 had the highest binding affinity and abundance.

Additional file 5: Figure S4. Flow cytometric analysis of UCB-CD34+ cells under different culture conditions. (A – C) Flow cytometric analysis of the CD34+ cells (A), CD38+ cells (B), CD34+CD38+ and CD34+CD38- cells (C) under different culture conditions. (D and E) Frequency of CD38+ cells (D), CD34+CD38+ cells and CD34+CD38- cells (E) under indicated culture conditions on day 0 and 7. FRESH represented CD34+ cells isolated from UCB on day 0, while the SIT, SITF and SITH represented CD34+ cells under indicated culture conditions on day 7 as described above. Data are shown as mean ± SD, n = 3. *$p < 0.05$, **$p < 0.01$ and ***$p < 0.001$; one-way ANOVA followed by Dunnett's multiple comparison test.

Additional file 6: Figure S5. RNA-Seq analysis of the stem cell-specific genes expression of CD34+ cells under different culture conditions. Shown were the genes of CD38 (A), C-KIT (B), CD49f (C), ESAM (D), CD45 (E), CD133 (F). The abscissa represented the culture conditions, while the ordinate represented FPKM.

Additional file 7: Figure S6. The dorsal wound progression of wildtype and diabetic mice within 17 days. WT, wild type mice; DB, diabetic mice.