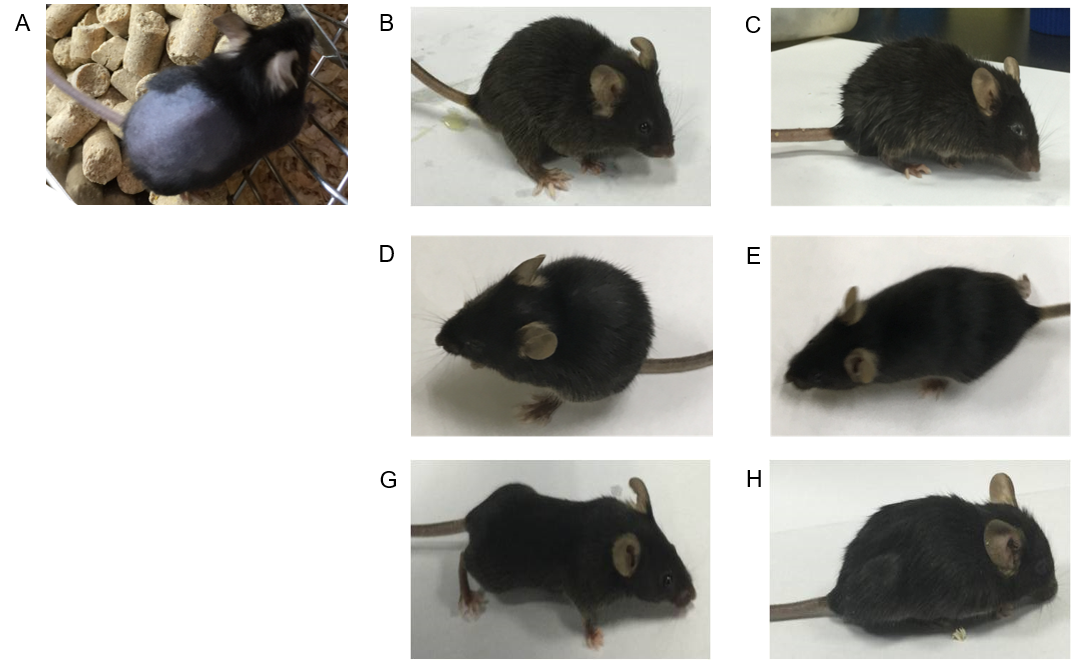
**Table S1.** Patient and Transplantation Characteristics

|  |  |
| --- | --- |
| Characteristic | Value (n=17) |
| Age, yr, median (range) | 39 (7~51) |
| Sex, n (%) |  |
| Male | 10 (59) |
| Female | 7 (41) |
| Diseases, n (%) |  |
| AML | 7 (41) |
| ALL | 3 (18) |
| MDS/MDS-MPN | 5 (29) |
| SAA | 1 (6) |
| Granulocytic sarcoma | 1 (6) |
| KPS before HSCT, median (range) | 92 (90-95) |
| Donor/HLA match, n (%) |  |
| Matched related | 12(71) |
| Mismatched related | 4 (24) |
| Matched unrelated | 1 (6) |
| Conditioning Regimen |  |
| ATG+Flu+Cy±Ara-C | 2 (12) |
| Bu+Flu+IDA± CTX+ATG | 9 (53) |
| DAC+Bu+Flu+ATG+IDA+CTX | 6 (35) |
| GVHD prophylaxis |  |
| CsA +MTX ± MMF | 9 (53) |
| FK506 + MTX ± MMF | 8 (47) |
| MNC,×108/L, median (range) | 8 (3-17) |
| CD34+ cells,×106/L, median (range) | 2.4 (1.1-5.2) |

****

**Figure S1.** **The appearances of mice in different groups.** The WT mice received allo-HSCT at day 25 (A); the WT mice received allo-HSCT at day 3 (B); the CGD mice received allo-HSCT at day 3 (C); the WT mice injected with anti-Gr1Ab (D) or without (E) after allo-HSCT at day 5; the CGD mice rescued with BSO (G) or without (H) after allo-HSCT at day 3.The mice were randomly selected from each group. These results are representative of at least 3 independent experiments with greater than 5 mice in each group.

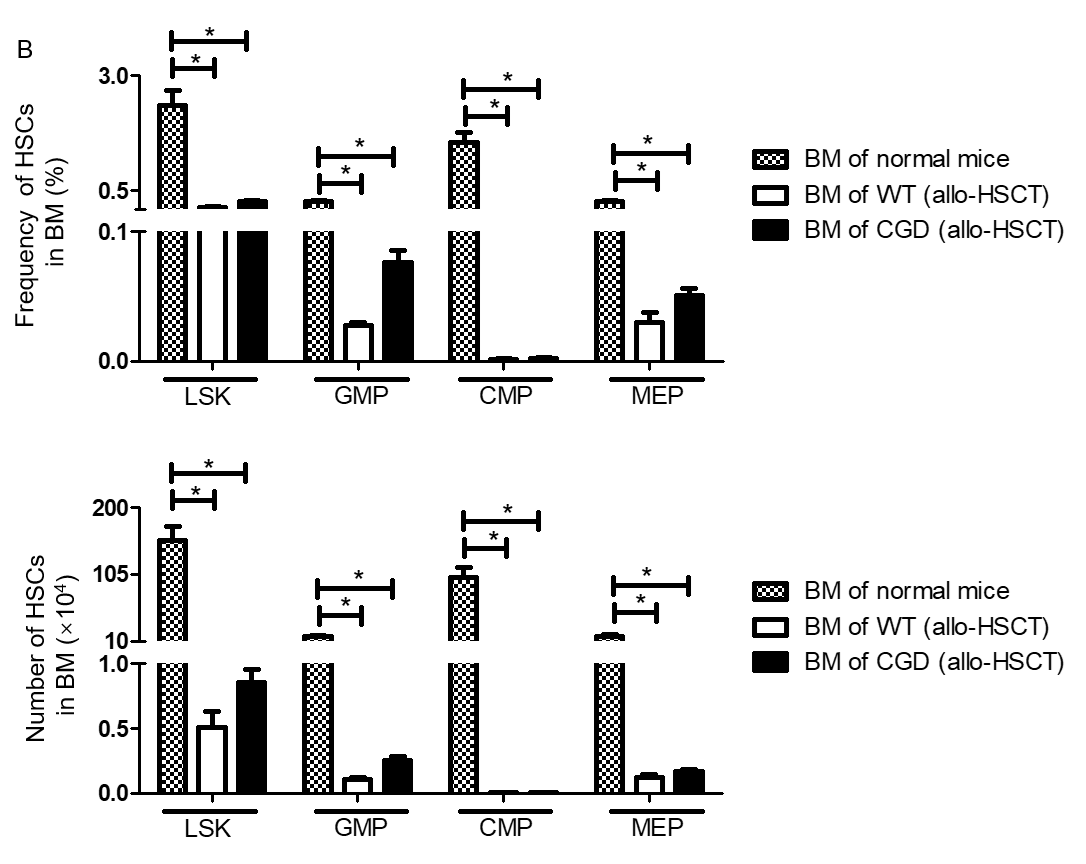
**Table S2.** Overall survival of different groups

|  |  |  |
| --- | --- | --- |
| **Group** | **Median survival time** | **P value** |
|
| Group 1: CGD allo-HSCT | 4 days | — |
| Group 2: CGD (PBS group) | 9 days | P<0.01(comparing to Group 1) |
| Group 3: WT (PBS group) | 12 days | NS(comparing to Group 2) |
| Group 4: CGD (BM group) | Survival | P<0.001(comparing to Group 1) |
| Group 5: WT (BM group) | Survival | NS(comparing to Group 4) |
| Group 6: CGD (T cell group) | 7 days | NS(comparing to Group 1)\* |
| Group 7: WT (T cell group) | 9 days | P<0.01(comparing to Group 6) |
| Group 8: CGD (TCD group) | 9 days | P<0.01(comparing to Group 1) |
| Group 9: WT (TCD group) | 9 days | NS(comparing to Group 8) |

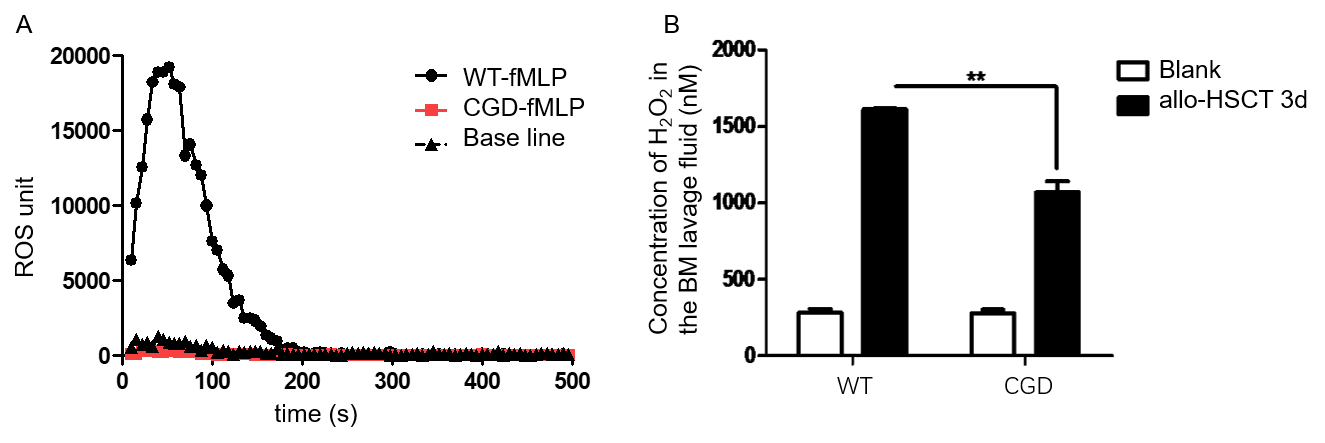
NS: No statistic difference.

\* Only the CGD mice of the T cell group had nearly the same survival rate as that of CGD mice receiving allo-HSCT





**Figure S2. The frequencies and absolute number of hematopoietic stem cells during hyperacute GVHD development.** LSK cells (Lin-Sca-1+c-Kit+ cells), CMP(CD34+ CD16/32int cells), MEP(CD34- CD16/32- cells) and GMP(CD34+ CD16/32+ cells) in the BM of CGD and WT mice were measured at day 3 after allo-HSCT. The control group consisted of age- and gender-matched normal mice. (A) The frequencies; (B) The absolute number; (C) The gating strategy of hematopoietic stem cells are shown. Data are expressed as mean ± standard error (SE). \*P<0.05.



**Figure S3. Oxidative stress determination.** (A) Bone marrow-derived CD11b+Gr1+ cells (1×106) from WT or CGD mice were stimulated with 100nM fMLP. (B) ROS production was evaluated by the use of chemiluminescence. ROS production in the BM of CGD mice receiving allo-HSCT for 3 days was significantly lower than that of C57BL/6 mice. Data are means ± SD of n = 3 mice. \*\*p <0.001.

**Table S3.** The levels of multiple cytokines associated with T cells in the serum of recipients at day 3 after allo-HSCT.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| cytokines in the serum | I  (WT control, mean, pg/mL) | II  (CGD suffering hyperacute GHVD, mean, pg/mL) | III  (CGD rescued by BSO, mean, pg/mL) | P value  (I VS II) | P value  (II VS III) | P value  (I VS III) |
| IL-10 | 24.2 | 63.8 | 23.2 | 0.0002 | 0.0015 | ns |
| IL-1β\* | 4.6 | 68.2 | 5.0 | < 0.0001 | 0.0001 | ns |
| IL-2\* | 11.0 | 47.3 | 15.4 | 0.0023 | 0.0041 | ns |
| IL-4 | 9.5 | 18.9 | 10.0 | 0.0064 | 0.0034 | ns |
| IL-5 | 84.3 | 33.8 | 77.7 | 0.0014 | 0.0013 | ns |
| IL-6\* | 63.3 | 986.5 | 29.2 | 0.0002 | 0.0002 | 0.0134 |
| IL-22 | 32.8 | 1545.3 | 38.0 | 0.0004 | 0.0004 | ns |
| IL-9 | 6.2 | 8.7 | 6.9 | ns | ns | ns |
| IL-13\* | 6.7 | 22.0 | 6.4 | 0.0099 | 0.0117 | ns |
| IL-27\* | 11.8 | 43.0 | 8.5 | 0.0038 | 0.0002 | ns |
| IL-23 | 5.8 | 4.8 | 4.3 | ns | ns | ns |
| IFN-γ\* | 268.7 | 1646.0 | 1625.7 | 0.0025 | ns | 0.0007 |
| IL-12p70\* | 6.7 | 65.7 | 6.8 | 0.0009 | 0.0016 | ns |
| GM-CSF\* | 5.3 | 24.0 | 6.0 | 0.0116 | 0.0131 | ns |
| TNF-a\* | 23.7 | 249.3 | 14.3 | < 0.0001 | 0.0001 | ns |
| IL-17A\* | 5.8 | 27.7 | 6.3 | 0.0118 | 0.0010 | ns |
| IL-18\* | 15.7 | 816.0 | 24.3 | 0.0001 | < 0.0001 | ns |

\* Cytokines up-regulated by more than 3 fold in the serum of CGD mice with hyperacute GVHD phenotype when compared with WT control.