Supplementary Table S5. Effect of mismatches on each DNA polymorphic markers and cGVHD, leukemia relapse and mortality by the univariate and multivariate analyses

(A) Univariate analysis

| Variable     | cGVHD** | N | Leukemia relapse |   | Mortality |   |
|--------------|---------|---|-----------------|---|-----------|---|
|              |         | N   | HR [95% C.I.]   | P-value | HR [95% C.I.] | P-value |
| OR2H2        |         |     |                 |         |           |         |
| Match        | 226     | 1.00 |                 |         | 253       | 1.00 |
| Mismatch*    | 78      | 0.99 | 0.60 1.63 0.969 | 0.969   | 85        | 1.31 |
|              |         |     |                 |         |           |         |
| HLA-F-AS1    |         |     |                 |         |           |         |
| Match        | 252     | 1.00 |                 |         | 279       | 1.00 |
| Mismatch*    | 52      | 0.63 | 0.33 1.21 0.161 | 0.969   | 59        | 1.03 |
| HLA-G_Field-2|        |     |                 |         |           |         |
| Match        | 287     | 1.00 |                 |         | 320       | 1.00 |
| Mismatch*    | 17      | 0.18 | 0.02 1.41 0.103 | 0.103   | 18        | 0.61 |
| HLA-DPB1     |         |     |                 |         |           |         |
| Match        | 134     | 1.00 |                 |         | 145       | 1.00 |
| Mismatch*    | 170     | 1.48 | 0.94 2.32 0.088 | 0.088   | 193       | 0.99 |

(B) Multivariate analysis at three loci

| Variable     | cGVHD** | N | Relapse |   | Mortality |   |
|--------------|---------|---|---------|---|-----------|---|
|              |         | N   | HR [95% C.I.]   | P-value | HR [95% C.I.] | P-value |
| HLA-F-AS1    |         |     |                 |         |           |         |
| match        | 252     | 1.00 |                 |         | 279       | 1.00 |
| mismatch*    | 52      | 0.70 | 0.36 1.35 0.282 | 0.282   | 59        | 1.12 |
| HLA-G_Field-2|        |     |                 |         |           |         |
| match        | 287     | 1.00 |                 |         | 320       | 1.00 |
| mismatch*    | 17      | 0.20 | 0.03 1.51 0.119 | 0.119   | 18        | 0.58 |
| HLA-DPB1     |         |     |                 |         |           |         |
| match        | 134     | 1.00 |                 |         | 145       | 1.00 |
| mismatch*    | 170     | 1.56 | 0.99 2.46 0.056 | 0.056   | 193       | 0.98 |

(C) Multivariate analysis at three loci with clinical information and transplantation outcome

| Variable     | cGVHD** | N | Relapse |   | Mortality |   |
|--------------|---------|---|---------|---|-----------|---|
|              |         | N   | HR [95% C.I.]   | P-value | HR [95% C.I.] | P-value |
| HLA-F-AS1    |         |     |                 |         |           |         |
| match        | 252     | 1.00 |                 |         | 279       | 1.00 |
| mismatch*    | 52      | 0.62 | 0.31 1.20 0.156 | 0.156   | 59        | 1.10 |


### HLA-Field-2

|       | 287  | 1.00  | 0.25   | 0.03   | 1.94   | 0.187  | 18  | 0.42  | 0.13   | 1.41   | 0.161  | 1.00  | 0.92  | 0.41   | 2.06   | 0.834  |
|-------|------|-------|--------|--------|--------|--------|-----|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| match |      |       |        |        |        |        |     |       |        |        |        |       |       |        |        |        |
| mismatch* | 17  | 0.25  | 0.03   | 1.94   | 0.187  | 18  | 0.42  | 0.13   | 1.41   | 0.161  | 1.00  | 0.92  | 0.41   | 2.06   | 0.834  |

### HLA-DPB1

|       | 134  | 1.00  | 1.58   | 1.00   | 2.50   | 0.050  | 193 | 0.91  | 0.59   | 1.42   | 0.683  | 1.00  | 0.71  | 1.45   | 0.929  |
|-------|------|-------|--------|--------|--------|--------|-----|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| match |      |       |        |        |        |        |     |       |        |        |        |       |       |        |        |        |
| mismatch* | 170 | 1.58  | 1.00   | 2.50   | 0.050  | 193 | 0.91  | 0.59   | 1.42   | 0.683  | 1.00  | 0.71  | 1.45   | 0.929  |

### Patient age (y.o.)

|       | 1 - 68 (med. 49) | linear | 1.00 | 0.98 | 1.02 | 0.960 | linear | 1.00 | 0.98 | 1.02 | 0.789 | 1.01 | 0.99 | 1.02 | 0.308 |
|-------|------------------|--------|------|------|------|-------|--------|------|------|------|-------|------|------|------|-------|

### Donor age (y.o.)

|       | 20 - 57 (med. 34) | linear | 0.99 | 0.96 | 1.02 | 0.380 | linear | 0.99 | 0.96 | 1.02 | 0.556 | 1.00 | 0.98 | 1.03 | 0.703 |
|-------|------------------|--------|------|------|------|-------|--------|------|------|------|-------|------|------|------|-------|

### Leukemia risk

|       | 140  | 1.00  | 0.73   | 0.46   | 1.15   | 0.175  | 188 | 2.30  | 1.45   | 3.66   | 0.000  | 2.56 | 1.72 | 3.82   | 0.000  |
|-------|------|-------|--------|--------|--------|--------|-----|-------|--------|--------|--------|-------|-------|--------|--------|-------|
| Standard |     |       |        |        |        |        |     |       |        |        |        |       |       |        |        |       |
| High    | 164  | 0.73  | 0.46   | 1.15   | 0.175  | 188 | 2.30  | 1.45   | 3.66   | 0.000  | 2.56  | 1.72 | 3.82  | 0.000  |

### GVHD prophylaxis

|       | 73   | 1.00  | 0.91   | 0.55   | 1.51   | 0.711  | 257 | 0.91  | 0.55   | 1.53   | 0.733  | 1.14 | 0.75 | 1.74   | 0.528  |
|-------|------|-------|--------|--------|--------|--------|-----|-------|--------|--------|--------|-------|-------|--------|--------|-------|
| Cyclosporin based |     |       |        |        |        |        |     |       |        |        |        |       |       |        |        |       |
| Tacrolimus based  | 229  | 0.91  | 0.55   | 1.51   | 0.711  | 257 | 0.91  | 0.55   | 1.53   | 0.733  | 1.14 | 0.75 | 1.74  | 0.528  |
| others             | 0    | 0.00  | 0.00   | 0.00   | 0.000  | 3    | 1.04  | 0.09  | 11.39  | 0.975  | 0.93 | 0.12 | 6.99  | 0.942  |

### Conditioning regimen

|       | 218  | 1.00  | 0.00   | 0.00   | 0.00   | 0.000  | 99  | 1.48  | 0.84   | 2.63   | 0.177  | 1.20 | 0.76 | 1.90   | 0.439  |
|-------|------|-------|--------|--------|--------|--------|-----|-------|--------|--------|--------|-------|-------|--------|--------|-------|
| myeloablative reduced intensity |     |       |        |        |        |        |     |       |        |        |        |       |       |        |        |       |
| reduced intensity               | 86   | 1.16  | 0.64   | 2.10   | 0.623  | 99  | 1.48  | 0.84   | 2.63   | 0.177  | 1.20 | 0.76 | 1.90  | 0.439  |

### Gender matching (Donor to Patient)

|       | 49   | 1.00  | 1.89   | 0.88   | 4.04   | 0.103  | 140 | 0.73  | 0.40   | 1.35   | 0.320  | 0.82 | 0.50 | 1.34   | 0.424  |
|-------|------|-------|--------|--------|--------|--------|-----|-------|--------|--------|--------|-------|-------|--------|--------|-------|
| Female to male          |     |       |        |        |        |        |     |       |        |        |        |       |       |        |        |       |
| Male to male            | 122  | 1.89  | 0.88   | 4.04   | 0.103  | 140 | 0.73  | 0.40   | 1.35   | 0.320  | 0.82 | 0.50 | 1.34  | 0.424  |
| Female to female        | 40   | 1.74  | 0.73   | 4.12   | 0.209  | 45  | 1.05  | 0.49   | 2.26   | 0.894  | 0.96 | 0.51 | 1.78  | 0.888  |
| Male to female          | 93   | 1.57  | 0.72   | 3.45   | 0.258  | 100 | 0.83  | 0.44   | 1.58   | 0.566  | 0.72 | 0.42 | 1.24  | 0.239  |

*: GVH direction; **: Chronic GVHD (cGVHD) at 2 years was assessed in patients who survived 100 or more days after transplantation; HLA-G_Field-2: the field-2 level (formerly known as 4-digit typing) alleles; N: Number of patients; n: Number of Grade III-IV or Grade II-IV cases; y.o: Years old; med: Median; HR: Hazard ratio; and [95% C.I.]: 95% confidence interval.