

## SUPPLEMENTAL MATERIAL

### SUPPLEMENTAL TABLES

**Table 1S. Characteristics of the control group of patients treated with haploidentical stem cell transplantation using post-transplant cyclophosphamide on protocol 2009-0266 (without NK cell infusions).**

| Characteristic                    | 2012-0708 (Study group; N = 13) | 2009-0266 (Control group; N = 45) |
|-----------------------------------|---------------------------------|-----------------------------------|
| Age (years, median (range))       | 45 (21-61)                      | 42 (18-60)                        |
| Sex (female)                      | 8 (61%)                         | 26 (58%)                          |
| Donor age (years, median (range)) | 34 (18-49)                      | 30 (17-67)                        |
| Donor type                        |                                 |                                   |
| Sibling                           | 6 (46%)                         | 20 (44%)                          |
| Child                             | 6 (46%)                         | 19 (42%)                          |
| Parent                            | 1 (8%)                          | 5 (11%)                           |
| Other                             | 0 (0%)                          | 1 (2%)                            |
| Graft type (bone marrow)          | 13 (100%)                       | 42 (93%)                          |
| Disease type                      |                                 |                                   |
| AML                               | 8 (62%)                         | 37 (82%)                          |
| CML                               | 5 (38%)                         | 8 (18%)                           |
| Disease status at transplant      |                                 |                                   |
| AML (CR1/2)                       | 7 (87.5%)                       | 27 (63%)                          |
| CML (CP2)                         | 3 (60%)                         | 5 (62.5%)                         |
| Cytogenetics (AML only)           | N=8                             | N=37                              |
| High-risk                         | 3 (37.5%)                       | 10 (27%)                          |
| Intermediate/good-risk            | 5 (62.5%)                       | 26 (70%)                          |
| Unknown                           | 0 (0%)                          | 1 (3%)                            |
| FLT3+ (AML only)                  | 2 (25%)                         | 9 (24%)                           |
| MRD+                              | 5 (38%)                         | 16 (35.5%)                        |

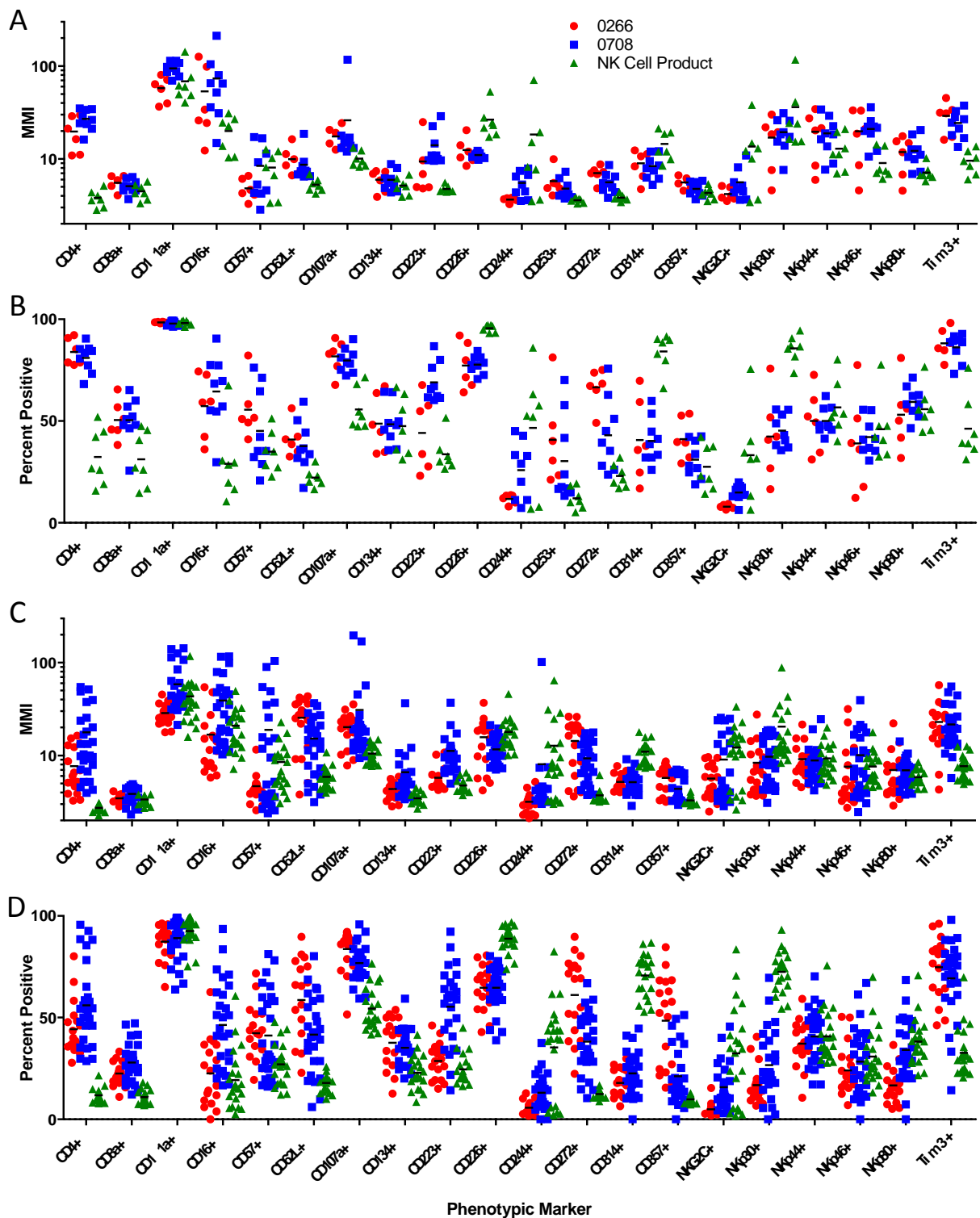
**Legend:** AML – acute myeloid leukemia, CML – chronic myeloid leukemia, CR- complete remission, CP- chronic phase, FLT3 – FMS-like tyrosine kinase 3 mutation, MRD – minimal residual disease.

**Table 2S.** Antibodies used for mass cytometry. For \*PE, FITC, APC, cells were first stained with KIR3DL1/S1 PE, KIR2DL1 FITC and KIR2DL2/3 APC followed by secondary and primary metal conjugated antibodies.

| <b>Marker</b> | <b>Metal or Fluorophore</b> | <b>Clone</b> | <b>Source</b>   | <b>Catalog #</b> |
|---------------|-----------------------------|--------------|-----------------|------------------|
| CD94          | 139La                       | DX22         | BioLegend       | 305502           |
| PE*           | 141Pr                       | PE001        | BioLegend       | 408102           |
| CD357         | 143Nd                       | 621          | BioLegend       | 311602           |
| FITC*         | 144Nd                       | FIT-22       | DVS-Fluidigm    | 3144006B         |
| CD4           | 145Nd                       | RPA-T4       | BioLegend       | 300502           |
| CD8a          | 146Nd                       | RPA-T8       | BioLegend       | 301002           |
| CD278/ICOS    | 147Sm                       | C398.4A      | BioLegend       | 313502           |
| CD134/OX-40   | 148Nd                       | Ber-ACT35    | BioLegend       | 350002           |
| CD223/LAG3    | 149Sm                       | Poly         | R&D             | AF2319           |
| CD314/ NKG2D  | 150Nd                       | 1D11         | BioLegend       | 320802           |
| CD107a        | 151 Eu                      | H4A3         | DVS-Fluidigm    | 3151002B         |
| TNFa          | 152Sm                       | Mab11        | DVS-Fluidigm    | 3152002B         |
| CD272/BTLA    | 153Eu                       | MIH26        | BioLegend       | 344502           |
| NKp46         | 154Sm                       | 9E2          | BioLegend       | 331902           |
| TIM3          | 156Gd                       | F38-2E2      | BioLegend       | 345002           |
| IFNg          | 158Gd                       | B27          | DVS-Fluidigm    | 3158017B         |
| TIGIT         | 160Gd                       | MBSA43       | eBioscience     | 16-9500-82       |
| NKp80         | 161Dy                       | 5D12         | BioLegend       | 346702           |
| CD56          | 162Dy                       | NCAM16.2     | BD              | 559043           |
| NKp44         | 163Dy                       | P44-8        | BioLegend       | 325102           |
| NKp30         | 164Dy                       | P30-15       | BioLegend       | 325202           |
| CD16          | 165Ho                       | 3G8          | DVS-Fluidigm    | 3165001B         |
| NKG2A         | 166Er                       | 131411       | R&D             | MAB1059          |
| CD226/DNAM-1  | 167Er                       | TX25         | BioLegend       | 337102           |
| CD11a         | 168Er                       | HI111        | BioLegend       | 301202           |
| NKG2C         | 169Tm                       | 134522       | R&D             | MAB1381          |
| APC*          | 170Er                       | A85-1        | BD              | 560089           |
| CD62L         | 171Yb                       | DREG-56      | BioLegend       | 304802           |
| CD57          | 172Yb                       | HCD57        | DVS-Fluidigm    | 3712009B         |
| Granzyme B    | 173Yb                       | GB11         | DVS-Fluidigm    | 3173006B         |
| CD253/TRAIL   | 174Yb                       | RIK-2        | BioLegend       | 308202           |
| CD3           | 175Lu                       | UCHT1        | BioLegend       | 300443           |
| KIR3DL/DS1    | PE                          | Z27.3.7      | Beckman Coulter | 41116015         |
| KIR2DL1       | FITC                        | 143211       | R&D             | FAB1844F         |
| KIR2DL2/DL3   | APC                         | DX27         | Miltenyi        | 130-092-617      |

## SUPPLEMENTAL FIGURE LEGENDS

**Figure 1S.** Single-parameter phenotypic assessment at Day +28 post-transplant of peripheral blood NK cells (CD3-CD56+) on protocol 2012-0708 (blue) and 2009-0266 (red), or from the NK cell product (green) as assessed by mass cytometry. Mass cytometry events were exported after sequential gating to exclude beads, include only singlet events, exclude dead cells, and include only CD3-CD56+ cells. Data [percent positive and mean metal intensity (MMI)] for each marker was exported from CytoBank and analyzed in Prism. A, B) All NK cells. C, D) NK cells separated into single-KIR+ subsets, with phenotypes determined for each individual subset. A, C) Mean metal intensity (MMI) of each marker. B, D) Percent of NK cells positive for each marker.



Supplemental Figure 1