BMT CTN 1101

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STATISITCAL ANALYSIS PLAN (SAP)

Version 1.0

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BMT CTN Protocol 1101
Statistical Analysis Plan (SAP)

Version 1.0

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Protocol

BMT CTN #1101 is titled “A Multi-Center, Phase III, Randomized Trial of Reduced Intensity (RIC) Conditioning and Transplantation of Double Unrelated Umbilical Cord Blood (dUCB) versus HLA-Haploidentical Related Bone Marrow (haplo-BM) for Patients with Hematologic Malignancies”.

1. General Review of Study Design and Process

1.1 Study Objectives

BMT CTN protocol #1101 is Phase III randomized, open label, multicenter trial designed to compare progression-free survival (PFS) at 2 years post randomization between patients who receive RIC followed by a dUCB transplant versus a related haplo-BM transplant for hematologic malignancy.

1.1.1 Primary Objective

The primary objective of the study is to compare progression-free survival (PFS) at 2 years post randomization between patients who received a dUCB transplant with patients who receive a related haplo-BM transplant.

1.1.2 Secondary Objectives

The secondary objectives of the study are/include:

- Secondary analysis of progression-free survival (PFS) including constructing Kaplan-Meier curves and fitting Cox proportional hazards model
- Overall survival
- Cumulative incidence of treatment-related mortality (TRM)
- Cumulative incidence of relapse/progression
- Cumulative incidence of hematologic recovery including neutrophil and platelet engraftment
- Cumulative incidence of donor cell engraftment at Day 28 and 56
- Cumulative incidence of grade II-IV and III-IV acute GVHD
- Cumulative incidence of chronic GVHD
- Cumulative incidence of primary and secondary graft failure
- Cumulative incidence of grade 3-5 toxicities per CTCAE version 4.0
- Cumulative incidence of infections
- Hospital admission and length of stay
- Health-related quality of life
- Cost effectiveness analysis (analysis described in separate SAP)

1.2 Study Design and Procedures

1.2.1 Primary Hypothesis and Primary Endpoint

The study is designed to test the null hypothesis that there is no difference in 2 year PFS between the dUCB and Haplo arms against the twos-sided alternative that there is a difference in 2 year PFS. The primary endpoint is the progression-free survival at 2 years from the date of randomization. The 2 year timepoint was selected to balance the expected higher risk of early TRM on the dUCB arm against the higher risk of late relapse on the Haplo arm.

1.2.2 Accrual Plan and Randomization

The target sample size of the study is 410 participants with 205 assigned to each treatment arm. Participants will be randomized to dUCB or Haplo transplant in a 1:1 ratio stratified by center. The estimated accrual period is 4 years.

1.2.3 Duration of Follow-up

Participants will be followed for up to 3 years post-transplant. Full follow-up will occur for 2 years post-transplant via AdvantageEDC. Follow-up beyond 2 years post-transplant will occur via CIBMTR.

1.3 Inclusion and Exclusion Criteria

Adult participants with a diagnosis of a hematologic malignancy aged between 18 and 70 years old are eligible if two partially HLA-matched UCB units at a minimum of 4/6 to the recipients at HLA-A, -B, -DRB1 (each with a minimum of 1.5 x 10^7/kg pre-cryopreserved total nucleated cell dose, 2.0 x 10^7/kg for non-red blood cell depleted units) and a related donor with 2, 3, or 4 HLA-mismatched type at high resolution are available. Participants must have a Karnofsky score greater than or equal to 70% and maintain adequate physical function measured by cardiac, hepatic, renal, and pulmonary assessments to receive the conditioning regimen. Major exclusions were participants with suitably matched related or unrelated donors, prior allogeneic hematopoietic stem cell transplant, disease relapse within 6 months from prior autologous hematopoietic stem cell transplant, antibodies to high expression loci HLA -A, -B, -C, and -DRB1. Also, participants have uncontrolled viral or fungal infections, or HIV positive serology, under pregnancy or breast-feeding, or plan to use donor lymphocyte infusion therapy will be excluded.

The protocol was amended several times to expand eligibility criteria including:

- The eligible lymphomas were expanded, including T-lymphoblastic lymphoma, prolymphocytic, adult T-cell leukemia/lymphoma in first or subsequent CR, lymphoma in CR or PR that failed at least one prior regimen of chemotherapy, lymphoma with stable disease except CLL, to allow a broader study population.
- The requirement for cytotoxic chemotherapy within 3 months of enrollment or autologous transplant within 24 months was removed, and instead a higher TBI

doses 300 cGY versus 200 cGY was added to the conditioning regimen for those participants who do not meet this requirement and are randomized to the dUCB transplant.

1.4 Treatment Description

The treatment description for dUCB and Haplo transplantation as well as GVHD prophylaxis and supportive cares are described below separately:

For participants that assigned to the haplo arm, the preparative regimen prior to transplant includes fludarabine 30 mg/m^2 IV from Day –6 to –2, cyclophosphamide 14.5 mg/kg IV at Days –6, –5, and total body irradiation 200 cGy at Day –1. The GVHD prophylaxis regimen is cyclophosphamide 50 mg/kg IV at Day 3 and 4, tacrolimus at a level of 5-15 ng/mL (or cyclosporine at a level of 200-400 ng/mL beginning Day 5 per institutional practice if participants are intolerant of tacrolimus), and mycophenolate mofetil 15 mg/kg three times a day taken orally from Day 5 to Day 35.

For participants that assigned to dUCB arm, 40 mg/m^2 Fludarabine will be given from Day -6 to -2, 50 mg/kg Cyclophophamide at Day -6 through IV. The total body irradiation dose at Day -1 will be 200 cGy if participants have received cytotoxic chemotherapy within the last 3 months or an autologous transplant within 24 months of enrollment, or 300 cGy if participants have not received. Participants will receive cyclosporine at a 200-400 ng/mL (or tacrolimus at a level of 5-15 ng/mL) since Day -3 and mycophenolate mofetil 15 mg/kg three times a day taken orally from Day -3 to Day 35 as GVHD prophylaxis regimen.

Participants will receive 5 mcg/kg Filgrastim (G-CSF) every day as a supportive care since Day 5 until their neutrophil counts are greater than 1500/mm^3 for three consecutive measurements on at least two different days.

For detailed treatment schedule and administration, refer to Protocol Sections 2.6.1 and 2.6.2 for details on the Haplo and dUCB arms respectively.

1.5 Response Variables and Data Collection Time Points

1.5.1 Response Variables

Response variables include:

- Progression free survival
- Overall survival
- Treatment-related Mortality
- Relapse/progression
- Neutrophil and platelet engraftment
- Donor cell engraftment at Day 28 and Day 56
- Acute and chronic GVHD
- Primary and secondary graft failure

- Patient-reported outcomes/health-related quality of life at baseline, 1 year, and 2 years

Safety endpoints included mortality, toxicity and adverse events. Safety monitoring will be conducted per protocol schedule. Adverse events will be reported per the BMT CTN Manual of Procedures (MOP). Definitions for each endpoint are described in detail in the protocol and in Section 4 of this SAP.

Of note, relapse/progression is a key component of the primary endpoint. Relapse is defined by either morphological or cytogenetic evidence of acute leukemia consistent with pre-transplant features, or radiologic evidence (including the recurrence of fluoro-deoxyglucose [FDG]-avid lesions on PET scan) of progressive lymphoma. When in doubt, the diagnosis of recurrent or progressive lymphoma should be documented by tissue biopsy. Minimal residual disease will not be considered evidence of relapse, however, minimal residual disease that progresses will be considered as relapse and the date of relapse will be the date of detection of minimal residual disease that prompted an intervention by the treating physician. Finally, institution of any therapy to treat persistent, progressive or relapsed disease, including withdrawal of immunosuppressive therapy or DLI, will be considered evidence of relapse/progression regardless of whether the criteria described above are met.

1.5.2 Timing of Assessments

Participants are required to complete both pre-transplant and post-transplant assessments. Pre-transplant evaluations must be completed within 30 days prior to patient enrollment, or within 56 days prior to the initiation of conditioning therapy. The future blood sample collection and lab tests must be completed within 30 days prior to the initiation of conditioning therapy. Post-transplant assessments occur weekly up to Day 91 and at Day 180, 365, 730 post-transplant. Death, relapse, infections, hospitalizations, and adverse events are reported on event-driven forms. Data on occurrence of these events are recorded per the BMT CTN MOP.

Participant data related to primary and secondary endpoints are collected through AdvantageEDC up to 2 years post-transplant. An additional minimal 1-year follow up data (equivalent to 3 years post-transplant) will be obtained from the CIBMTR.

2. General Statistical Considerations

2.1 Sample Size and Power Calculations

The primary analysis will be done using a pointwise comparison of the 2 year progression-free survival (PFS) due to the potential crossing hazards. Based on CIBMTR data, most events after UCB and haploidentical transplantation occur by 2 years and the baseline PFS at 2 years is assumed to be approximately 35-40% on RIC transplantation using unrelated adult donors. The Phase II data on dUCB and Haplo

transplants and long-term CIBMTR data on unrelated adult donor transplants with RIC indicates PFS probabilities at 6 months, 1 year, and 2 years of 65%, 47%, and 35%. The study targets a 15% increase in PFS in the transplanted participants, which translates to a slightly lower 14.25% increase in PFS in the intention-to-treat (ITT) populations after accounting for the 5% of patients who are expected to be randomized but not make it to transplant. Considering an additional 5% of participants lost to follow-up or withdrawn from the study by 2 years, 205 participants on each arm is sufficient to maintain the type I error of 5% across all planned interim analyses and provide 80% statistical power.

2.2 Handling Missing Data

Comprehensive data quality assurance will be conducted to reconcile data issues including missing data.

For time-to-event outcomes in the primary analysis, participants will be censored at 2 years post randomization if they have not had an event or had an event after 2 years post-randomization. Participants lost to follow-up will be censored at the time of last contact date captured in the AdvantageEDC.

An Endpoint Review Committee will adjudicate primary and secondary endpoints and resolve endpoints for any participants with missing data using available source documents provided by sites. Participants with missing data will be considered as not evaluable for an outcome if both the site-reported data and ERC review could not determine the endpoint. Such participants who are not evaluable for an outcome at a time point will be either censored at a prior time point or excluded from the analysis for that time point, depending on the endpoint. Note that the level of missingness is expected to be low (<5% for most outcomes).

Quality of life is expected to have a higher rate of missingness given the longitudinal nature of the data. The missing data pattern of the HQL measurements will be examined using graphical techniques and logistic regression models conditional on survival. At each time point, estimates of the difference in HQL between the treatments conditional on survival at that time point will be obtained using inverse probability of censoring weighted GEE with independent estimating equations to account for missing data.

2.3 Multiple Comparisons

A significance level of 5% will be used for the primary and secondary endpoints. A 95% confidence interval will be constructed for Kaplan Meier estimates and cumulative incidence estimates.

A subgroup analysis of 2 year PFS is planned. For that analysis, a Bonferroni adjusted significance level of 0.05/3 = 0.0167 will be used for the interaction term (subgroup*treatment) to account for multiple testing.

2.4 Interim Analyses and Stopping Guidelines

2.4.1 Interim Efficacy Analysis

Interim analyses for efficacy are planned when the information fraction reaches approximately 0.48, 0.74, 0.94, and 1.00. At each interim look, a two-sided test using the difference in Kaplan-Meier estimates of PFS at 2 years post-randomization will be conducted. The information fraction, which is the reciprocal of the variance of the difference in Kaplan-Meier estimates between two treatments divided by the final information (450.55) at the end of study assuming no censoring prior to 2 years, will be calculated. The scheduled information fraction at each interim analysis for efficacy is shown in the below table. The actual information fraction may differ from the scheduled information fraction to accommodate scheduled DSMB meetings. The Lan-DeMets error spending function $\alpha(t)=\min(\alpha,\alpha t^3)$ will be used to approximate the O-Brien-Fleming boundaries and to calculate critical values based on the observed information fractions[1].

Calendar time since study start (years)	Information Fraction	Critical Value for Efficacy	Nominal Type I Error	Critical value for Futility
3	0.48	3.0103	0.0013	-
4	0.74	2.4534	0.0071	1.2057
5	0.94	2.1092	0.0175	1.6881
6 (Final)	1.00	2.0551	0.0199	2.0551

2.4.2 Interim Futility Analysis

Futility analyses are planned once accrual is completed to avoid reducing the power for secondary endpoints. The objective of the futility analysis is to allow for earlier publication and release of study results in the event that there is unlikely to be a difference in treatment outcomes for the primary endpoint. The stopping rule for futility will be triggered when the conditional power to reject the null hypothesis at the observed effect size is less than 10%. The conditional power estimate will be calculated using the current trend. Sensitivity analyses will be provided assessing conditional power under the null, alternative, and upper bound of the 95% CI for the current trend.

2.4.3 Interim Safety Monitoring

The key safety endpoint for interim monitoring is the cumulative incidence of TRM at Day 100 for each arm. Each month, the null hypothesis that the cumulative incidence of TRM at Day 100 is $\leq$ 15% will be tested against the alternative that it is > 15%. Day 100 TRM will be monitored using a SPRT for binary outcomes. At each interim analysis, the total number of patients enrolled is plotted against the total number of patients who have experienced transplant-related mortality. The continuation region of the SPRT is defined by two decision boundaries. Only the upper boundary will be used for monitoring the study to protect against high incidences of TRM. If the graph falls above the upper

boundary, the SPRT rejects the null hypothesis, and concludes that the TRM incidence is higher than predicted by the observed number of patients enrolled on study. Otherwise, the SPRT continues until enrollment reaches the target goal. The SPRT for TRM was developed from the following SPRT:

A SPRT contrasting 15% versus 25% 100-day incidence, which results in decision boundaries with a common slope of 0.197 and an upper intercept of 4.258, with nominal type I and II errors of 6% and 10%, respectively.

The table illustrates the operating characteristics of described truncated test based on a simulation study that assumed uniform accrual of 205 participants over a four-year time period.

True 100-Day Incidence	15%	20%	25%
Probability Reject Null	0.052	0.464	0.933
Mean Month Stopped	49.6	38.7	21.7
Mean # Endpoints in 100 Days	29.6	30.2	19.9
Mean # Patients Enrolled	197.9	151.3	79.3

2.5 Timing of Analysis

Interim analyses for efficacy and futility will occur coincident with regularly scheduled DSMB meetings as described above.

For the primary analysis, a data freeze will be done upon the completion of ERC adjudication of the study data and completion of related data quality assurance. An ERC Charter will be in place to define the scope of ERC review as well as the timeline for the data adjudication. The primary analysis will focus on the first 2 years post-transplant. The analysis is planned to occur when the last enrolled patient (and all prior patients) have completed the 2-year follow up for the primary endpoint, progressed, died, or withdrawn from the study prior to 2 years. The long-term follow up data for overall survival, progression and chronic GVHD available from the CIBMTR at the time of the primary analysis will be incorporated.

The timing for the ancillary study cost-effectiveness analysis (CEA) is covered in a separate protocol managed by the CEA team at Fred Hutchinson Cancer Research Center.

2.6 Software

All analyses will be conducted using SAS 9.4 or higher software, or R version 3.1.0 or higher.

2.7 Analysis Populations

2.7.1 Primary Analysis Population

All randomized participants will be included in the primary analysis population per intent-to-treat (ITT) principle regardless of whether the assigned transplant was administered. This population will be applied to the primary endpoint, overall survival (OS), treatment-related mortality (TRM), relapse/progression, and health-related quality of life. For this population, time to an event will be calculated as time from randomization to the earliest of event, competing risk, last contact date or 2 years post-randomization.

The ERC does not currently plan to adjudicate eligibility. As a result, all randomized participants will be included in the primary analysis population. Analyses of each endpoint and population used will follow the analysis plan as described below in section 4 of this SAP.

2.7.2 Transplanted Population

Several secondary analyses and endpoints assess post-transplant outcomes. For these analyses and endpoints, the analysis population will consist of those participants receiving a dUCB or Haplo transplant without a relapse between randomization and transplant. Participants will be analyzed according to randomized treatment. For time to event outcomes, time to an event will be calculated as time from transplant to the earliest of event, competing risk, last contact date or 2 years post-transplant.

2.7.3 Safety Analysis Population

The reporting of serious adverse events will be consistent with standard BMT CTN procedures with the addition of any anticipated SAE related to the study drug or treatment/procedure. All reported serious adverse events potentially associated with study drug or treatment/procedure will be carefully examined with respect to the severity and relationship to study drug. The type and severity of adverse events will be described. Safety data will be summarized using Medical Dictionary for Regulatory Activities (MeDRA) Coding Version 20.0 or above.

The safety analysis population will consist of transplanted participants according to transplant received.

2.8 General Analysis Guidelines

Continuous variables will be described using mean, standard deviation, median, minimum and maximum. Frequencies and percentages will be displayed for categorical data.

Any changes to the planned analyses and addition of any ad-hoc analyses will be documented in the final analysis report with detailed justification. If it is a change to analysis of an existing endpoint, the change should be clearly stated in the relevant Exhibit. If it is a new endpoint or analysis, it should be included as a supplemental exhibit.

A cost effectiveness analysis (CEA) is an ancillary study for 1101. Statistical consideration and analysis plan for the ancillary study are NOT covered in this SAP. Presentation and publication of the primary results will not include ancillary studies.

3. Participant Characteristics and Compliance

3.1 Demographics and Baseline Characteristics

Descriptive statistics for demographics and baseline characteristics will be presented by treatment group. Characteristics to be examined are: age, gender, race/ethnicity, performance status, primary disease, risk status (Leukemia in CR1 vs CR2+; Lymphoma in CR vs PR), CMV status, HCT-comorbidity index, time from diagnosis to transplantation, cytogenetic at diagnosis, HLA matching, prior autologous transplant, number of regimens prior to transplant, cell dose, and haplo donor relationship. Disease risk will also be described using the DRI definition.

3.2 Participant Compliance

A table listing significant protocol deviations/violations will be provided by treatment group (if applicable). Compliance with protocol interventions will be evaluated as appropriate. Premature withdrawals will be described for each case.

A consort diagram will be provided to illustrate study accrual and follow up.

In individual Exhibits, the number of included participants will be provided/described for each analysis.

4. Analysis Plan

4.1 Analysis of the Primary Endpoint

The primary endpoint for this study is progression-free survival (PFS) at 2 years post-randomization. An event for this outcome will be relapse/progression (as defined in the protocol) or death. The primary analysis will utilize the primary analysis population. The difference in Kaplan-Meier estimates for PFS at 2 years will be estimated and a 95% confidence interval will be constructed for the difference in PFS. The two arms will be compared using the Z-test for comparing the KM estimates. The final p-value will be adjusted for the interim looks. In addition, if the target accrual of 410 is not reached, the maximum information fraction for any interim looks will not be adjusted but rather the final look will be adjusted based on the final accrual. If the non-compliance rate is higher than 10%, a sensitivity analysis will be considered using an as treated comparison.

A secondary analysis of PFS will be conducted to assess the nonproportional hazards originally assumed in the design. A Cox proportional hazards model will be fit to PFS and graphical diagnostics and time-dependent covariates will be used to assess the presence of nonproportional hazards between treatment groups. If there is no evidence of nonproportional hazards between treatment arms, a relative risk will be estimated from the Cox model both unadjusted and adjusted for other covariates. If there appear to

be nonproportional hazards, confidence bands for the difference in PFS will be constructed. A comparison of PFS post 2 years, which accounts for patients enrolled early in the study having additional follow-up past 2 years, will be conducted using the linear combination test proposed by Logan et al.[2] Next, the adjusted PFS probabilities[3] will be estimated using a Cox model stratified on treatment and other significantly different covariates. Age, performance score, disease, disease risk, CMV status, and any other covariates which are significantly different between the treatments ($p<0.1$) will be used in the adjusted analyses. Finally, PFS will also be described in each arm from the time of transplant.

4.2 Analysis of the Secondary Endpoints

4.2.1 Overall Survival (OS):

Death from any cause will be considered as event for this endpoint. The time to event will be time from randomization to death. OS at 2 years post randomization will be estimated using the Kaplan-Meier method and 95% confidence interval will be computed. This endpoint will be compared between the treatment groups using the log-rank test. Overall survival will also be described in each arm from the time of transplant.

The same secondary analysis approaches described for the primary endpoint will also be conducted for overall survival.

4.2.2 Treatment-related Mortality (TRM):

The incidence of TRM will be compared between the treatment arms treating relapse/progression as a competing risk. An event is death without evidence of disease progression or recurrence. Gray's test[4] will be used to compare any difference between treatment. A secondary analysis on TRM will be conducted using a Cox model to examine the treatment and covariate effects. Age, performance score, disease, disease risk, CMV status, and any other baseline characteristics which are significantly different between arms will be included as covariates in the Cox model to adjust for potential imbalances. TRM will also be described in each arm from the time of transplant.

4.2.3 Relapse/progression:

Incidence of relapse/progression will be estimated using cumulative incidence function, treating death in remission as a competing risk. Incidence of relapse/progression will be compared between the treatment arms using Gray's test. In a secondary analysis, relapse/progression rates will be compared using a Cox proportional hazards model with treatment as the main effect. Age, performance score, disease, disease risk, CMV status, and any other significantly imbalanced characteristics will be adjusted for. Relapse/progression will also be described in each arm from the time of transplant.

4.2.4 Hematologic Recovery:

Hematologic recovery will be assessed according to neutrophil and platelet counts recovery after transplant.

Neutrophil recovery is defined as achieving an absolute neutrophil count (ANC) ≥ 500/mm^3 for three consecutive measurements on three different days. The first of the three days will be designated the day of neutrophil recovery. For patients who never drop ANC below 500/mm^3, the date of neutrophil recovery will be Day +1 post transplant. The competing event is death without neutrophil recovery.

Platelet recovery is defined as the first day of a sustained platelet count >20,000/mm^3 with no platelet transfusion in the preceding seven days. The first day of sustained platelet count above this threshold will be designated the day of platelet engraftment. For patients who never drop their platelet count below 20,000/mm^3, the date of platelet recovery will be Day +1 post transplant. The competing event is death without platelet recovery.

Incidence of neutrophil and platelet engraftment from the time of transplant will be estimated using the cumulative incidence function with death prior to engraftment as the competing risk. Incidence of neutrophil engraftment at 56 days and incidence of platelet engraftment at 100 days will be compared between the treatment arms using a pointwise comparison of the cumulative incidence probabilities.

4.2.5 Donor Cell Engraftment:

Donor chimerism at Days 28 and 56 after transplantation in each treatment arm will be described for whole blood chimerism. The proportions of participants with full (> 95%), mixed (5-95% donor cells), graft rejection (< 5%), or death prior to assessment of donor chimerism will be tabulated between treatment. The proportions alive with ≥ 5% donor chimerism will be compared between the two groups using the chi-square test or Barnard's exact unconditional test.

4.2.6 Primary Graft Failure:

Primary graft failure is defined as <5% donor whole blood or marrow assessed by whole blood chimerism assays by Day 56. The proportions of patients alive at Day 56 but with primary graft failure will be described and compared between the treatment arms using the chi-square test or Barnard's exact unconditional test.

4.2.7 Secondary Graft Failure:

The cumulative incidence of secondary graft failure out of those who had initial engraftment will be described using the cumulative incidence estimator, treating death and disease relapse/progression prior to secondary graft failure as a competing event. Secondary graft failure is defined as initial whole blood or marrow donor chimerism ≥ 5% declining to < 5% on subsequent measurements with time to secondary graft failure beginning at the first day of primary engraftment. The cumulative incidence of secondary graft failure will be described and the Gray's test will be used to compare any difference between treatment arms. The cumulative incidence of any graft failure, including primary graft failure defined as <5% donor chimerism and secondary graft failure following initial engraftment, will be described between treatment arms. The time of primary graft failure will be set as the date of the last chimerism measurement on or before Day 56.

4.2.8 Acute GVHD of Grades II-IV and III-IV:

Acute GVHD will be graded according to the BMT CTN MOP. Cumulative incidence of acute GVHD will be estimated from the time of transplant using the cumulative incidence function, treating death prior to acute GVHD as the competing risk. Cumulative incidence of acute GVHD will be compared between treatment arms using Gray's test. Incidence of both grades II-IV acute GVHD and grades III-IV acute GVHD will be evaluated.

4.2.9 Chronic GVHD:

The incidence of chronic GVHD will be computed using the cumulative incidence method, treating death prior to chronic GVHD as a competing risk. The event of interest is any chronic GVHD based on NIH Consensus Criteria that evaluates eight organs on a 0-3 scale and computes an overall severity score. Cumulative incidence of chronic GVHD will be compared between treatment arms using Gray's test.

4.2.10 Incidence of Toxicities Grades ≥ 3 per CTCAE version 4.0:

Frequencies of grade 3 or higher toxicities based on NCI Common Terminology Criteria for Adverse Events (CTCAE) Version 4 will be tabulated at Day 28, Day 56, Day 180, 1 year and 2 years post-transplant by toxicity type and maximum grade. The cumulative incidence of Grade ≥3 toxicity will be compared between treatment arms at Days 28, 56, 180, 365, and 730 using a chi-square test.

4.2.11 Incidence of Infections:

All grade 2 and 3 infections, as defined by the BMT CTN Technical MOP, occurring within 2 year after randomization will be reported. The number of infections and the number of patients experiencing infections will be tabulated by type of infection, severity, and time period after transplant. The cumulative incidence of infections, treating death as a competing risk, will be compared at 6 months, 1 year and 2 years between the treatment groups using Gray's test. Grade 1 CMV through Day 56 will also be reported.

A secondary analysis of infections requiring hospitalization will be conducted in a similar way. Hospitalizations are collected on a separate eCRF. Infections requiring hospitalizations will be estimated using the primary reason for discharge from the re-admission/hospitalization form rather than the infection form.

4.2.12 Incidence of Re-admission/Hospitalization:

The number of hospital readmissions, the number of patients experiencing hospital readmissions, and the average length of stay for both hospital readmissions and the initial transplant hospitalization will be described. The number of days alive and not hospitalized will be used to examine the total duration of hospitalization in the first 6 months accounting for death. A Mann-Whitney test will be used to compare between treatment arms.

4.2.13 Patient-reported Outcomes/ Health-related Quality of Life

Health-related quality of life data including FACT-BMT, MOS SF-36, Global HQL, Occupational Functioning, and EQ-5D are collected. The FACT-BMT instrument will be summarized by the Trial Outcome Index, comprised of the physical, functional and BMT-specific items. The MOS SF-36 will be summarized both numerically and graphically by

the Physical Component Summary (PCS) and Mental Component Summary (MCS). The EQ-5D utility score will be calculated.

HQL will be described and compared between the two treatment arms over time. Above mentioned quality of life assessment data will be scored according to the recommendations of the developers. The scores will be presented using simple descriptive statistics at each assessment time point by treatment arm. The missing data pattern will be examined on health quality of life data using graphical techniques and logistic regression models conditional on survival. The inverse probability of censoring weighting with independent estimating equation may be used to account for missing data.

4.2.14 Subgroup Analysis of PFS

The subgroup analysis will be conducted on 2 year PFS testing the interaction term between treatment group and disease, disease risk and age using a logistic regression model. The differences will be compared at the 0.05/3 significance level to adjust for multiple testing. The Kaplan-Meier method will be used to describe each level of subgroup graphically if a significant interaction is identified.

5. Template of Proposed Table/Figure/Listing (TFL) Shells

Table/Figure/Listing titles and layout are for illustration purposes only, and may not be the final layout or wording chosen for publications or presentations. Actual format of the tables and figures may differ and will be subject to change in the final analysis report and/or publication.

See Appendix of this SAP for the exhibits title and shell.

6. References

[1] Jennison C, Turnbull BW. Group sequential methods with applications to clinical trials. Chapman and Hall/CRC, Boca Raton, 2000.

[2] Logan, B.R., Klein, J.P., and Zhang, M.-J. Comparing treatments in the presence of crossing survival curves: an application to bone marrow transplantation. Biometrics, 64: 733-740, 2008.

[3] Zhang X, Loberiza FR, Klein JP, Zhang M-J. A SAS macro for estimation of direct adjusted survival curves based on a stratified Cox regression model. Computer methods and programs in biomedicine 2007; 88: 95-101.

[4] Gray RJ. A class of K-sample tests for comparing the cumulative incidence of a competing risk. Annals of Statistics 1988, 16: 1141-1154.

Appendix

Exhibit 1101-1: Participant Disposition and Follow-Up

A consort diagram will be provided showing the number of participants, study assignment, and compliance with each phase of the protocol as applicable. A table will be provided with descriptive statistics on length of follow-up by assigned treatment arm.

Exhibit 1101-2: Participant Demographics and Baseline Characteristics

Baseline characteristics and demographics will be described by frequencies and percentages for categorical covariates, and minimum, maximum, median, mean, and standard error for continuous covariates. The following covariates may be included:

- Treatment group assignment
- Gender
- Ethnicity
- Race
- Patient age
- Lansky/Karnofsky performance score
- Primary Diagnosis
- Disease Risk
- DRI
- HLA match score
- CMV Status
- HCT-Specific Comorbidity Index Score
- Time from Diagnosis to Transplant
- Donor/Recipient Sex Match
- Cytogenetics

Other baseline covariates will be summarized at the request of the investigators. P-values for treatment group comparisons will not be provided.

	Treatment Arm		
	dUCB (N=XXX) N (%)	**Haplo (N=XXX) N (%)**	**Total (N=XXX) N (%)**
Gender			
Female			
Male			
Ethnicity			
Hispanic or Latino			
Not Hispanic or Latino			
Unknown			
Not Answered			
Race			
American Indian/Alaskan Native			
Asian			
Hawaiian/Pacific Islander			

	Treatment Arm		
	dUCB (N=XXX) N (%)	Haplo (N=XXX) N (%)	Total (N=XXX) N (%)
Black or African American			
White			
More than One Race			
Other, Specify			
Unknown			
Not Answered			
Age, years			
Mean (SD)			
Median (Range)			
Lansky/Karnofsky Performance Score			
>= 90			
< 90			
Missing			
Primary Diagnosis			
Acute Lymphoblastic Leukemia (ALL)			
Acute Myelogeneous Leukemia (AML)			
Biphenotypic/Undifferentiated/Prolymphocytic Leukemia			
Hodgkin's Lymphoma			
Large Cell Lymphoma			
Follicular Non-Hodgkins Lymphoma			
T-cell Leukemia/Lymphoma			
Mantle Cell Lymphoma			
Other Lymphoma			
Disease Risk for Leukemia Patients			
First Complete Remission			
Second Complete Remission			
Third or More			
Disease Risk for Lymphoma Patients			
Complete Response			
Partial Response			
Follicular or Non-Hodgkin's			
Cytogenetics for ALL in CR1 Patients			
Presence of t(9;22), t(1;19), t(4;11) or MLL arrangements			
Cytogenetics for AML in CR1 Patients			
Presence of t(8,21) without CKIT mutation			

	Treatment Arm		
	dUCB (N=XXX) N (%)	Haplo (N=XXX) N (%)	Total (N=XXX) N (%)
Presence of inv(16) without CKIT mutation or t(16;16)			
Presence of Mutated NPM1 without FLT3-ITD or with FLT3-ITD^{low} mutations			
APL in First Molecular Remission at end of Consolidation			
Disease Risk Index (DRI)			
Low			
Intermediate			
High			
Very High			
Prior Autologous Transplant			
Prior Autologous Transplant			
No Prior Autologous Transplant			
HLA Matching Score for Haploidentical Donor at Randomization			
3/6			
4/6			
5/6			
4/8			
5/8			
6/8			
Not Required*			
HLA Match Score for Best Matched Cord Blood at Randomization			
4/6			
5/6			
6/6			
HLA Match Score for Worst Matched Cord Blood at Randomization			
4/6			
5/6			
6/6			
Total # Transplanted			
CMV Status			
Positive			
Negative			
Missing			
Time from Diagnosis to Transplantation, days			
Mean (SD)			
Median (Range)			

	Treatment Arm		
	dUCB (N=XXX) N (%)	**Haplo (N=XXX) N (%)**	**Total (N=XXX) N (%)**
Post Thaw Total Nucleated Cell Dose Infused x 10^7/kg			
Mean (SD)			
Median (Range)			
IQR			
Post Thaw CD34+ Cell Dose Infused x 10^6/kg			
Mean (SD)			
Median (Range)			
IQR			
Post Thaw CD3+ Cell Dose Infused x 10^6/kg			
Mean (SD)			
Median (Range)			
IQR			

Exhibit 1101-2: Participant Compliance by Treatment Arm

The number of participants and reason not receiving study treatment will be described as below.

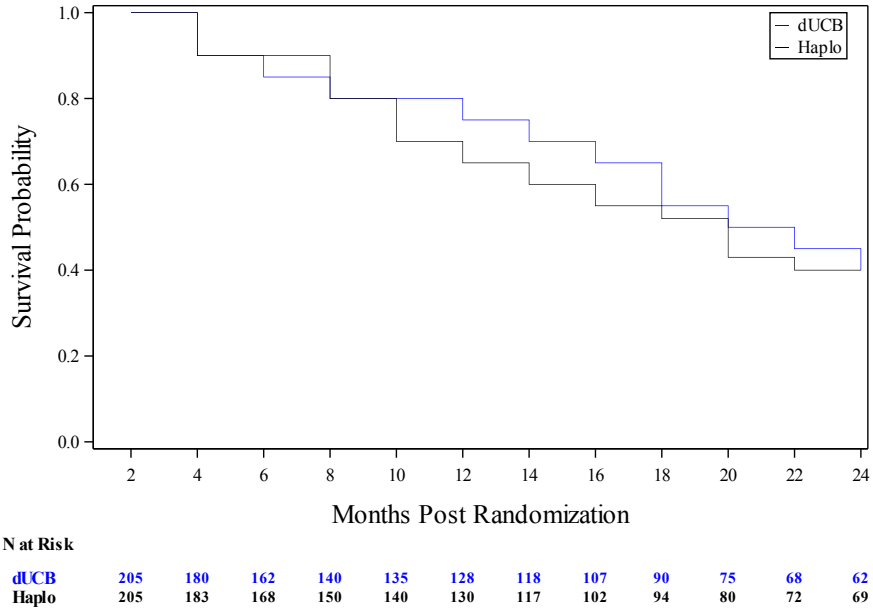
	dUCB (N=XXX)	Haplo (N=XXX)	Total (N=XXX)
Received Assigned Transplant			
Did Not Receive Assigned Transplant			
Received Alternate Transplant			
dUCB			
Haplo			
Other[1]			
Withdrew Study Consent/Refused Transplant			
Relapse Prior to Transplant			
Died Prior to Transplant			

[1] *List other transplant*

Exhibit 1101-3: Progression-free Survival by Treatment Arm

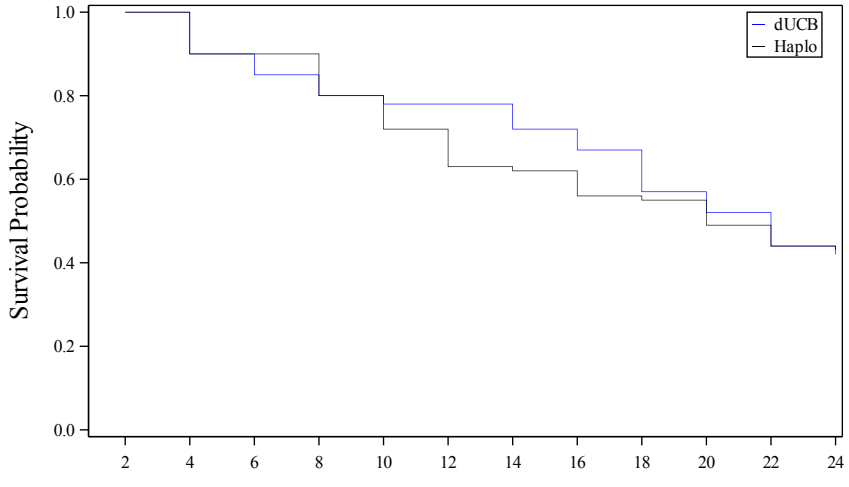
The primary analysis of progression-free survival will be plotted and summarized.

Figure A: PFS Post Randomization



N at Risk												
dUCB	205	180	162	140	135	128	118	107	90	75	68	62
Haplo	205	183	168	150	140	130	117	102	94	80	72	69

Figure B: PFS Post Transplant



N at Risk												
dUCB	195	180	172	152	130	122	111	100	87	74	64	60
Haplo	195	183	168	150	140	130	117	102	94	80	72	69

Kaplan Meier Estimates and 95% Confidence Intervals for Progression-free Survival

	dUCB (N=XXX)	**Haplo (N=XXX)**	**P-value ***
# Events Post Randomization	XX	XX	--
Median Follow-Up Post Randomization (months)	XX (XX,XX)	XX (XX,XX)	--
2 Year PFS Post Randomization (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	X.XX

*Note: P-value from pointwise comparison

A secondary analysis of PFS including constructing Kaplan-Meier estimates at 2 years post-transplant and assessing nonproportional hazards assumed in the study design will be provided.

	dUCB (N=XXX)	**Haplo (N=XXX)**	**P-value ***
# Events Post Transplant	XX	XX	--
Median Follow-Up Post Transplant (months)	XX (XX, XX)	XX (XX, XX)	--
2 Year PFS Post Transplant (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	X.XX

*Note: P-value from pointwise comparison

Additional Figure #: PFS with confidence bands

Additional Table #: Multivariate Cox Proportional Hazards Regression Model for PFS

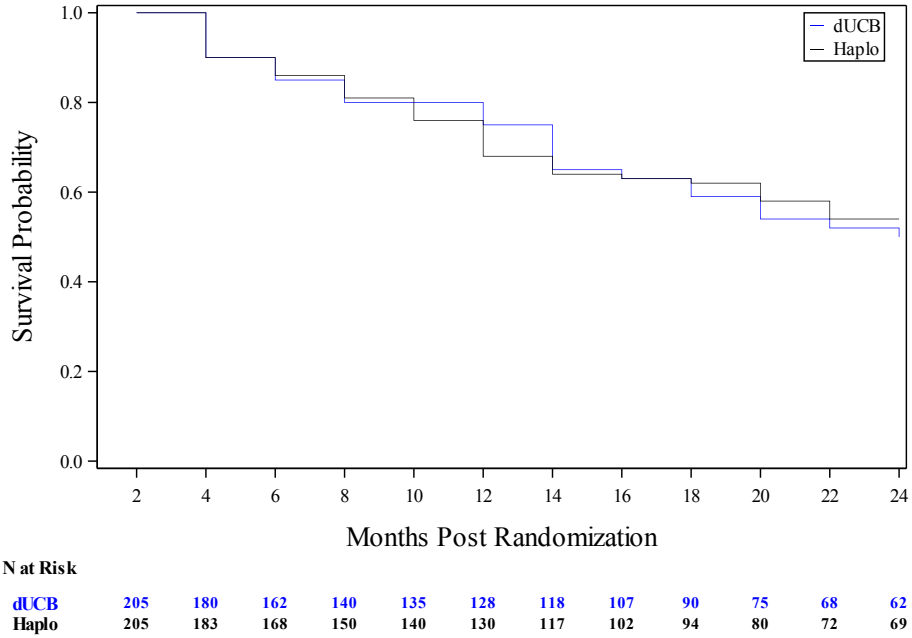
Covariates	**Level**	**N**	**HR**	**95% CI**	**P-value**
Treatment Group	Overall				X.XX
	dUCB	XX	1.00		
	Haplo	XX	X.XX	X.XX – X.XX	X.XX
Covariates with (p<0.1) between treatment *	Overall				X.XX
	Level 1	XX	1.00		
	Level 2	XX	X.XX	X.XX – X.XX	X.XX

*Note: Age, performance score, disease diagnosis, disease risk, CMV status, and other covariates that significant different between the treatments (p<0.1)

Exhibit 1101-4: Overall Survival by Treatment Arm

The primary analysis of overall survival (OS) curves will be plotted and summarized.

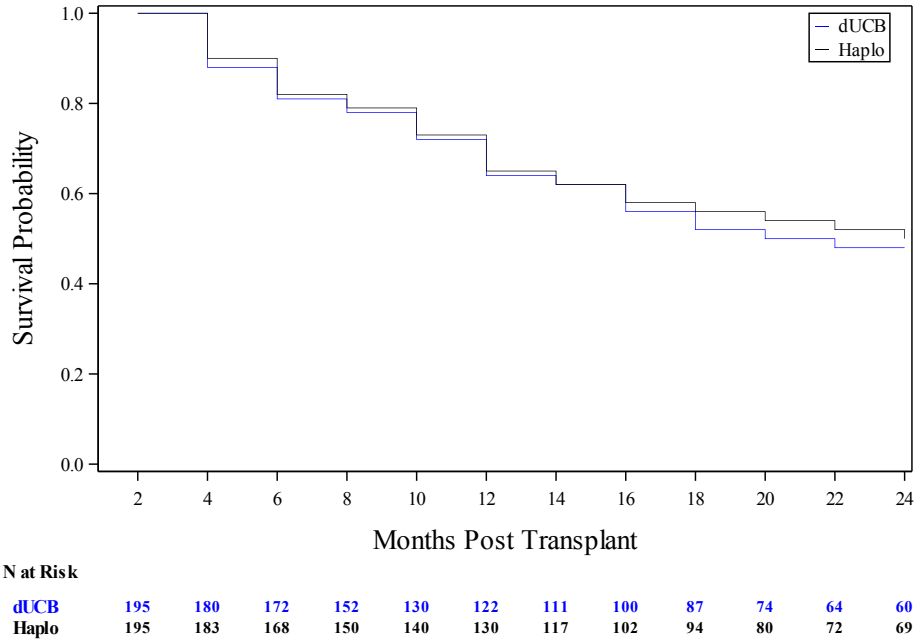
Figure A: OS Post Randomization



N at Risk

dUCB	205	180	162	140	135	128	118	107	90	75	68	62
Haplo	205	183	168	150	140	130	117	102	94	80	72	69

Figure B: OS Post Transplant (consider 5% of randomized participants did not proceed to transplant)



N at Risk

dUCB	195	180	172	152	130	122	111	100	87	74	64	60
Haplo	195	183	168	150	140	130	117	102	94	80	72	69

Kaplan Meier Estimates and 95% Confidence Intervals for Overall Survival

	dUCB (N=XXX)	**Haplo (N=XXX)**	**P-value ***
# Events Post Randomization	XX	XX	--
Median Follow-Up Post Randomization (months)	XX (XX,XX)	XX (XX,XX)	--
2 YR OS Post Randomization (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	X.XX
2 YR OS Post Transplant (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	X.xx

*Note: P-value from pointwise comparison

A secondary analysis of OS will be performed by assessing proportional hazards based on the results of the assessment.

Additional Figure #: OS with confidence bands

Additional Table #: Multivariate Cox Proportional Hazards Regression Model for OS

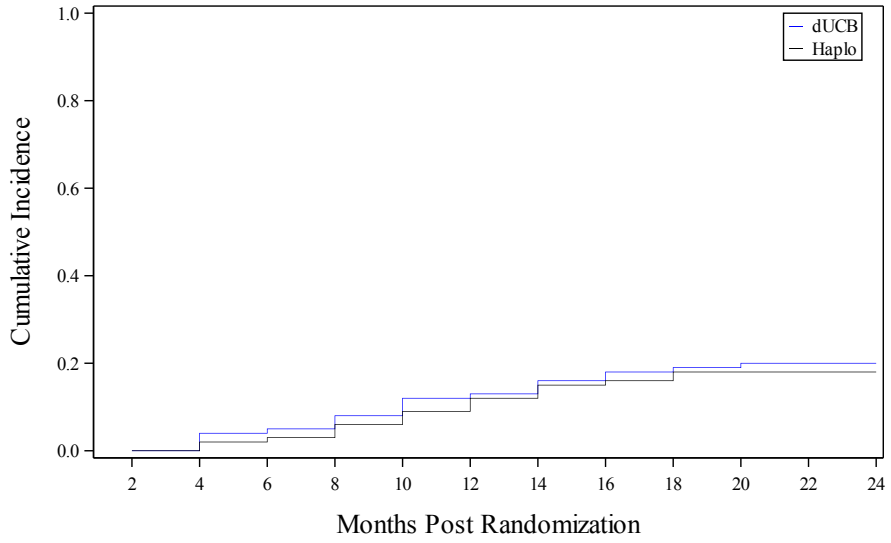
Covariates	**Level**	**N**	**HR**	**95% CI**	**P-value**
Treatment Group	Overall				X.XX
	dUCB	XX	1.00		
	Haplo	XX	X.XX	X.XX – X.XX	X.XX
Covariates with (p<0.1) between treatment *	Overall				X.XX
	Level 1	XX	1.00		
	Level 2	XX	X.XX	X.XX – X.XX	X.XX

*Note: Age, performance score, disease diagnosis, disease risk, CMV status, and other covariates that significant different between the treatments (p<0.1)

Exhibit 1101-5: Cumulative Incidence of Treatment-related Mortality

Cumulative incidence of treatment-related mortality (TRM) will be plotted as below.

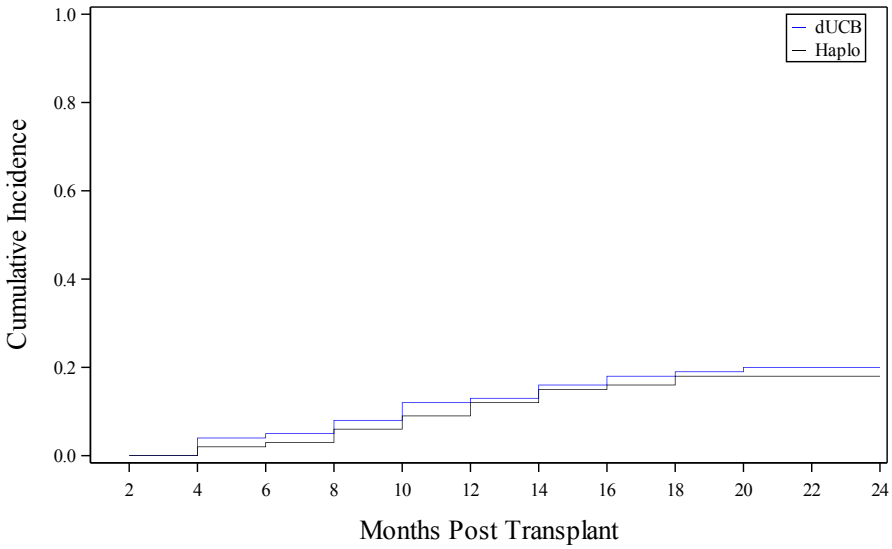
Figure A: Post Randomization



N at Risk

dUCB	**205**	**180**	**162**	**140**	**135**	**128**	**118**	**107**	**90**	**75**	**68**	**62**
Haplo	**205**	**183**	**168**	**150**	**140**	**130**	**117**	**102**	**94**	**80**	**72**	**69**

Figure B: Post transplant



N at Risk

dUCB	**195**	**180**	**172**	**152**	**130**	**122**	**111**	**100**	**87**	**74**	**64**	**60**
Haplo	**195**	**183**	**168**	**150**	**140**	**130**	**117**	**102**	**94**	**80**	**72**	**69**

*Note: P-value from Gray's test can be added to the plots

Cumulative Incidence Estimates and 95% Confidence Intervals for TRM

	dUCB (N=XXX)	**Haplo (N=XXX)**
Day 100 TRM Incidence Rate (95% CI)		
Post Randomization	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Post Transplant	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Day 180 TRM Incidence Rate (95% CI)		
Post Randomization	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Post Transplant	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
1 Year TRM Incidence Rate (95% CI)		
Post Randomization	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Post Transplant	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
2 Years TRM Incidence Rate (95% CI)		
Post Randomization	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Post Transplant	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)

For the secondary analysis of TRM, a Cox proportional hazards model with treatment as the main effect will be constructed.

Additional Table #: Cox Proportional Hazards Regression Model for TRM

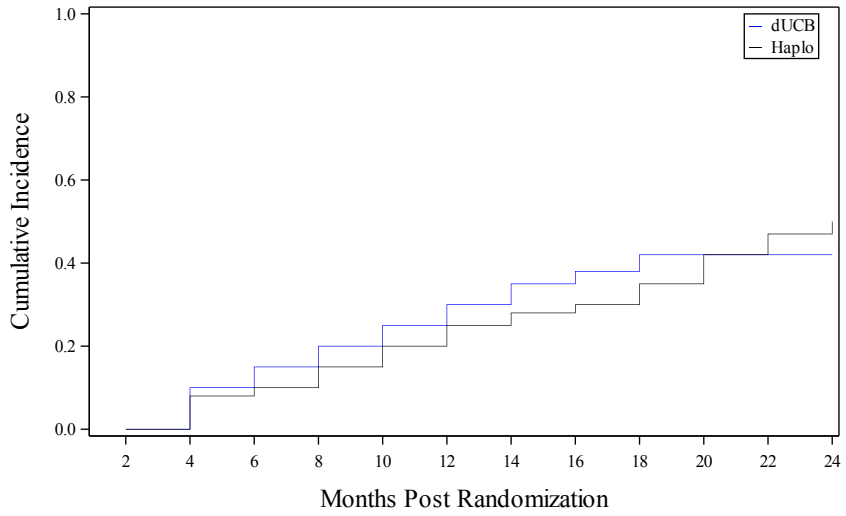
Covariates	**Level**	**N**	**HR**	**95% CI**	**P-value**
Treatment Group	Overall				X.XX
	dUCB	XX	1.00		
	Haplo	XX	X.XX	X.XX – X.XX	X.XX
Covariates with (p<0.1) between treatment *	Overall				X.XX
	Level 1	XX	1.00		
	Level 2	XX	X.XX	X.XX – X.XX	X.XX

*Note: Age, performance score, disease diagnosis, disease risk, CMV status, and other covariates that significant different between the treatments (p<0.1)

Exhibit 1101-6: Cumulative Incidence of Relapse/Progression

Cumulative incidence of relapse/progression will be plotted as below.

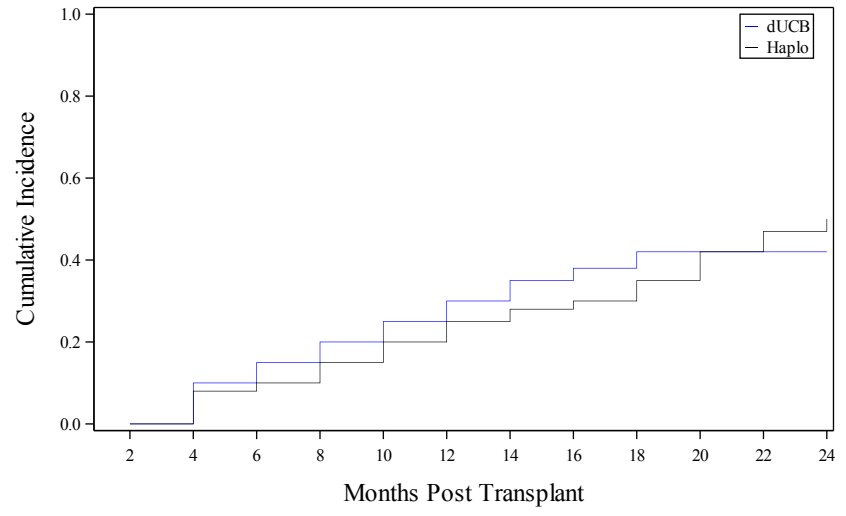
Figure A: Post Randomization



N at Risk

dUCB	**205**	**180**	**162**	**140**	**135**	**128**	**118**	**107**	**90**	**75**	**68**	**62**
Haplo	**205**	**183**	**168**	**150**	**140**	**130**	**117**	**102**	**94**	**80**	**72**	**69**

Figure B: Post Transplant



N at Risk

dUCB	**195**	**180**	**172**	**152**	**130**	**122**	**111**	**100**	**87**	**74**	**64**	**60**
Haplo	**195**	**183**	**168**	**150**	**140**	**130**	**117**	**102**	**94**	**80**	**72**	**69**

*Note: P-value from Gray's test can be added to the plots

Cumulative Incidence Estimates and 95% Confidence Intervals for Relapse/Progression

	dUCB (N=XXX)	**Haplo (N=XXX)**
1 Year Relapse Incidence Rate (95% CI)		
Post Randomization	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Post Transplant	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
2 Years Relapse Incidence Rate (95% CI)		
Post Randomization	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Post Transplant	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)

For the secondary analysis of relapse/progression, a Cox proportional hazards model with treatment as the main effect will be constructed.

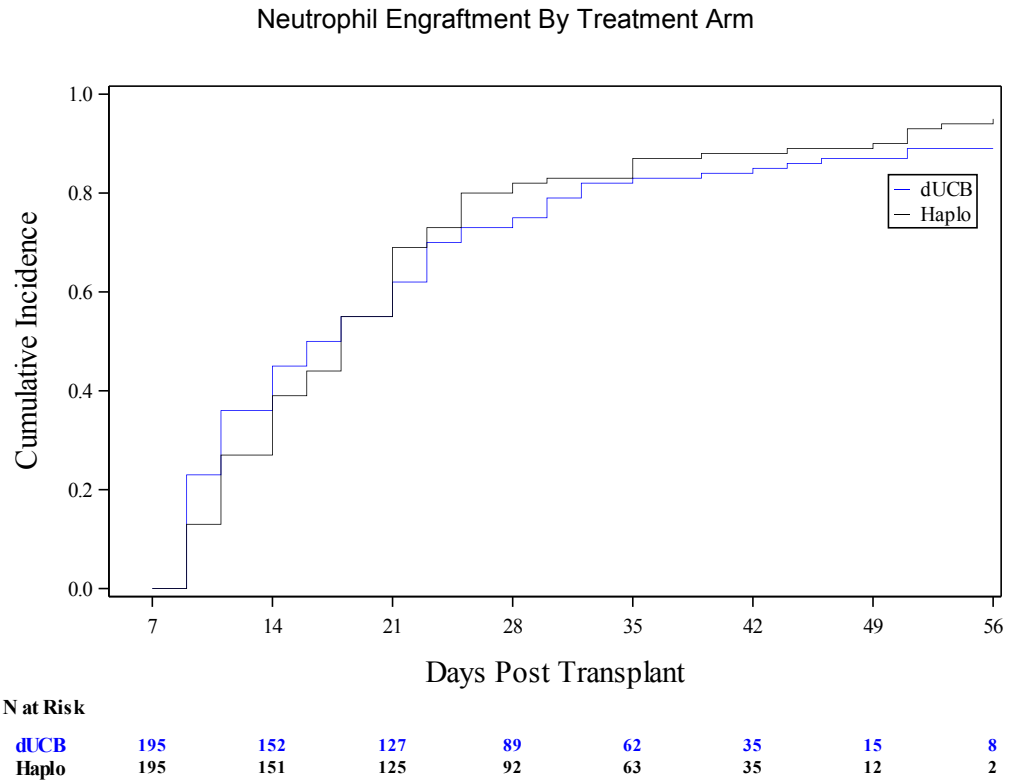
Additional Table #: Cox Proportional Hazards Regression Model for Relapse/Progression

Covariates	**Level**	**N**	**HR**	**95% CI**	**P-value**
Treatment Group	Overall				X.XX
	dUCB	XX	1.00		
	Haplo	XX	X.XX	X.XX – X.XX	X.XX
Covariates with (p<0.1) between treatment *	Overall				X.XX
	Level 1	XX	1.00		
	Level 2	XX	X.XX	X.XX – X.XX	X.XX

*Note: Age, performance score, disease diagnosis, disease risk, CMV status, and other covariates that significant different between the treatments (p<0.1)

Exhibit 1101-7: Cumulative Incidence of Hematologic Recovery

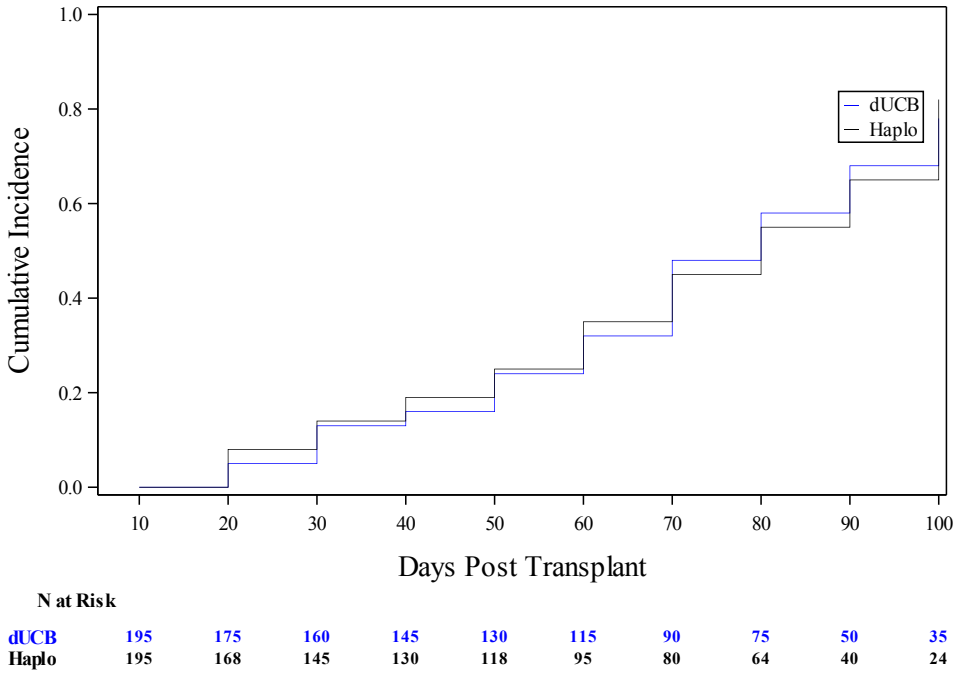
Cumulative incidence of neutrophil and platelet engraftment will be plotted as below.



	dUCB (N=XXX)	Haplo (N=XXX)	P-value *
Neutrophil Recovery			X.XX
Day 28 Incidence Rate (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Day 56 Incidence Rate (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Median Time to Neutrophil Recovery, days	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	

*Note: P-value from pointwise comparison

Platelet Engraftment By Treatment Arm



	dUCB (N=XXX)	Haplo (N=XXX)	P-value *
Platelet Recovery to > 20k			X.XX
Day 56 Incidence Rate (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Day 100 Incidence Rate (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Median Time to Platelet Recovery, days	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Platelet Recovery to > 50k			X.XX
Day 56 Incidence Rate (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Day 100 Incidence Rate (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	
Median Time to Platelet Recovery, days	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	

*Note: P-value from Gray's test

Exhibit 1101-8: Donor Cell Engraftment

The median and range for evaluable chimerism assay will be described in the below table. The proportion of alive participants with ≥5% donor chimerism will be compared between two groups.

Table 1: Descriptive Statistics of Chimerism Assay on Day 28 and Day 56

	dUCB (N=XXX)	**Haplo (N=XXX)**	**Total (N=XXX)**
Day 28 Chimerism Assay			
Marrow Sample	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Blood Sample	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Day 56 Chimerism Assay			
Marrow Sample	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Blood Sample	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)

Table 2: Proportions of Participants with Donor Chimerism

	dUCB (N=XXX)		**Haplo (N=XXX)**		**Total (N=XXX)**		**P-value ***
	N	**(%)**	**N**	**(%)**	**N**	**(%)**	
Day 28 Chimerism Assay							
Marrow Sample							--
Full (> 95%)							
Mixed (5-95%)							
Graft Rejection (< 5%)							
Death Prior to Assessment							
Blood Sample							--
Full (> 95%)							
Mixed (5-95%)							
Graft Rejection (< 5%)							
Death Prior to Assessment							
Day 56 Chimerism Assay							
Marrow Sample							--
Full (> 95%)							
Mixed (5-95%)							
Graft Rejection (< 5%)							
Death Prior to Assessment							
Blood Sample							--
Full (> 95%)							

Mixed (5-95%)							
Graft Rejection (< 5%)							
Death Prior to Assessment							
% Alive with ≥ 5% Donor Chimerism at Day 56	XXX	XX.X	XXX	XX.X	XX	XX.X	X.XX

*Note: P-value from Chi-square or Barnard's Exact Unconditional test

Exhibit 1101-9: Cumulative Incidence of Graft Failure

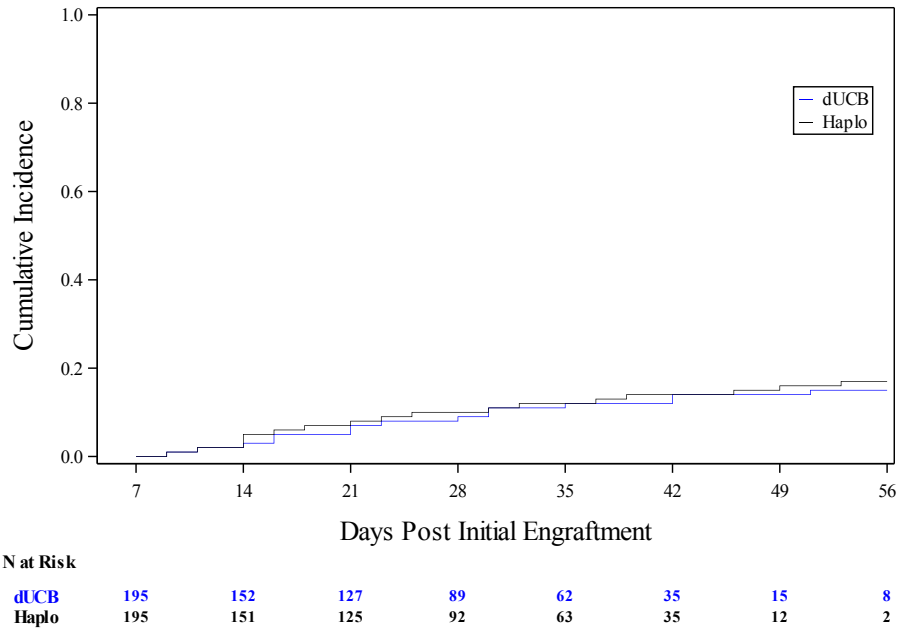
The number of primary graft failure and secondary graft failure will be described in the below table. The cumulative incidence of secondary graft failure will be plotted.

Table X: Summary of Graft Failure by Treatment Arm

	dUCB N=(XXX)		Haplo (N=XXX)		Total (N=XXX)		P-value
	N	(%)	N	(%)	N	(%)	
Primary Graft Failure							X.XX
Alive at Day 56 with Primary Graft Failure							
Had Initial Engraftment							
Died prior to Engraftment							
Secondary Graft Failure *							--
Alive and Engrafted							
Secondary Graft Failure							
Relapse or Death Prior to Secondary Graft Failure							

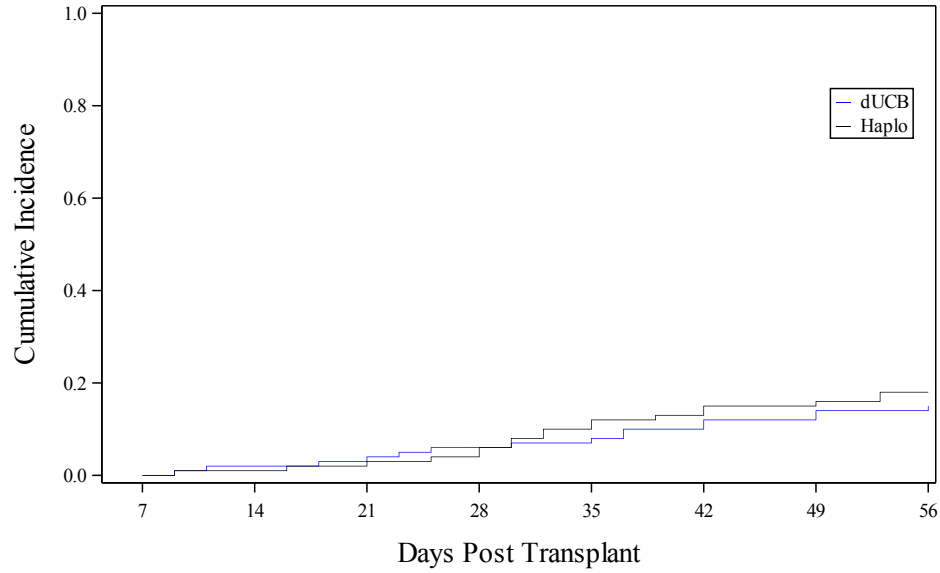
*Note: secondary graft failure is out of those who had initial engraftment

Secondary Graft Failure by Treatment Arm



*Note: P-value from Gray's test can be added to the plots

Graft Failure by Treatment Arm



N at Risk								
dUCB	195	152	127	89	62	35	15	8
Haplo	195	151	125	92	63	35	12	2

***Note: P-value from Gray's test can be added to the plots**

Exhibit 1101-10: Cumulative Incidence of Grades II-IV and III-IV acute GVHD

Cumulative incidence of Grades II-IV and Grades III-IV will be plotted as below, respectively.

Figure A: Grades II-IV acute GVHD By Treatment Arm

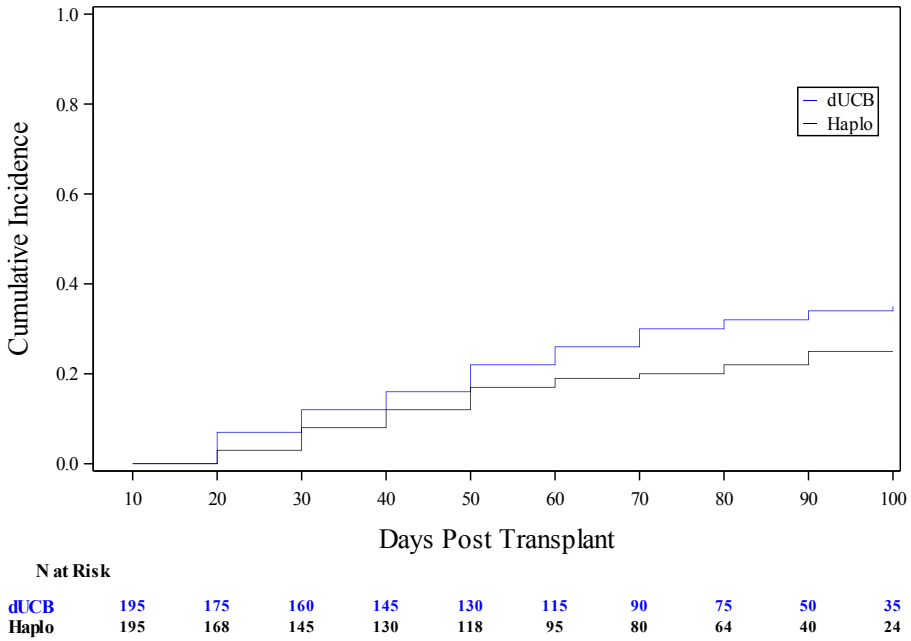
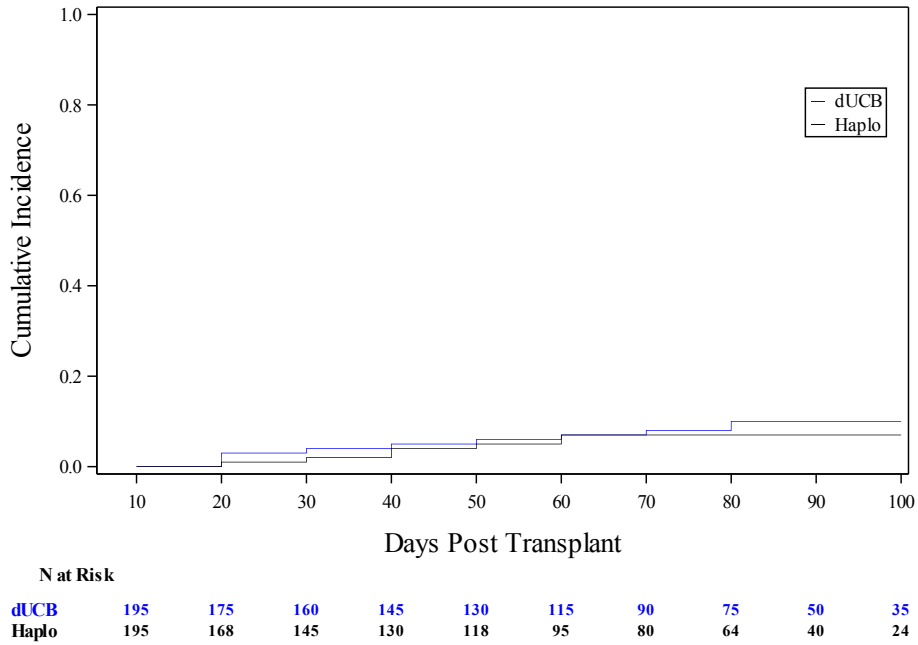


Figure B: Grades III-IV acute GVHD By Treatment Arm



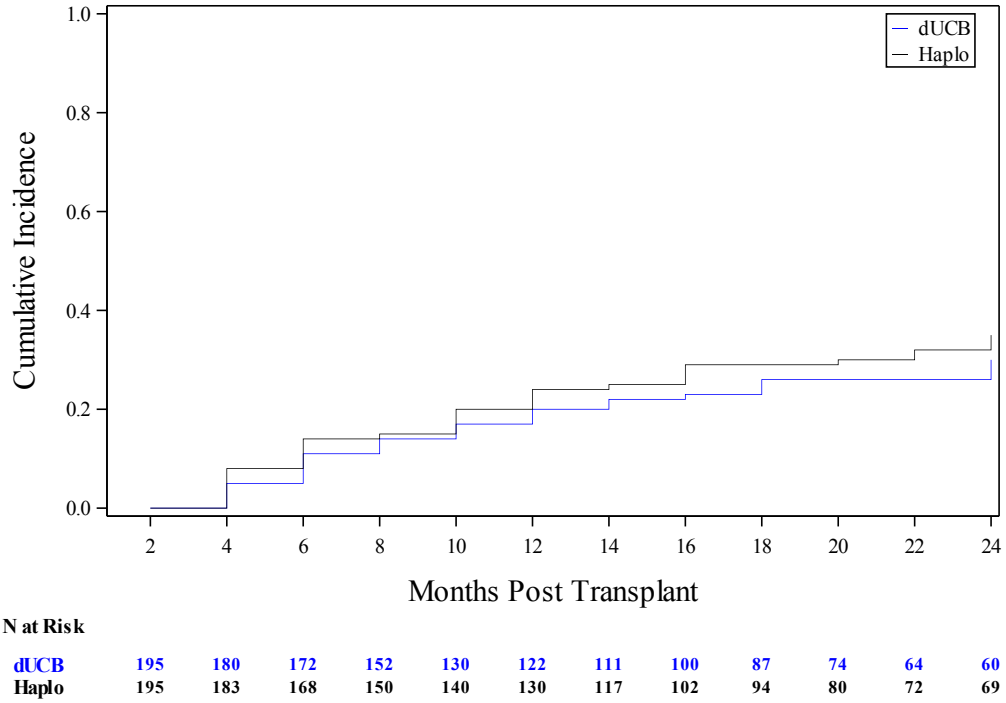
Cumulative Incidence Estimates and 95% Confidence Intervals for Grades II-IV and Grades III-IV acute GVHD

	dUCB (N=XXX)	Haplo (N=XXX)	Total (N=XXX)
Day 91 Grades II-IV acute GVHD (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Day 91 Grades III-IV acute GVHD (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Day 180 Grades II-IV acute GVHD (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)
Day 180 Grades III-IV acute GVHD (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)

*Note: P-value from Gray's test can be added to the plots

EXHIBIT 1101-11: Cumulative Incidence of Chronic GVHD

Cumulative incidence of chronic GVHD will be plotted as below, respectively.



Cumulative Incidence Estimates and 95% Confidence Intervals for Grades II-IV and Grades III-IV acute GVHD

	dUCB (N=XXX)	**Haplo (N=XXX)**	**Total (N=XXX)**	**P-value ***
Chronic GVHD at 2 Years (95% CI)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	XX.X (XX.X,XX.X)	X.XX

*Note: P-value from Gray's test

Table X: NIH Consensus Severity Scoring

	dUCB (N=XXX)	**Haplo (N=XXX)**	**Total (N=XXX)**
None	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Mild	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Moderate	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Severe	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)
Not Evaluable	XX.X (XX.X)	XX.X (XX.X)	XX.X (XX.X)

EXHIBIT 1101-12: Cumulative Incidence of Toxicities Grade ≥ 3 per CTCAE version 4.0

The bar graphs will be used to describe toxicity frequencies for each time interval as well as cumulative over time. Assessments time points include Day 28, Day 56, Day 180, Day 365, and Day 730.

Additional summary table may be provided.

Additional Table #: Summary by Type of Toxicity

	Grade 3-5 Toxicities Post-Transplant		
Toxicities	**dUCB (N=XXX) N (%)**	**Haplo (N=XXX) N (%)**	**Total (N=XXX) N (%)**
Grades 3-5 Oral Mucositis			
Grades 3-5 Cystitis noninfective			
Grades 3-5 Acute kidney injury			
Grades 3-5 Chronic kidney disease			
Grades 3-5 Hemorrhage			
Grades 3-5 Hypotension			
Grades 3-5 Hypertension			
Grades 3-5 Cardiac arrhythmia			
Grades 3-5 Left ventricular systolic dysfunction			
Grades 3-5 Somnolence			
Grades 3-5 Seizure			
Grades 3-5 Thrombotic thrombocytopenic purpura			
Grades 3-5 Capillary leak syndrome			
Grades 3-5 Hypoxia			
Grades 3-5 Dyspnea			
Grades 3-4 ALT			
Grades 3-4 AST			
Grades 3-4 Bilirubin			
Grades 3-4 Alkaline Phosphatase			
Received Dialysis? - Yes			
Abnormal Liver Function? - Yes			

Additional Table #: Summary by System Organ Class

	Grade 3-5 Toxicities Post-Transplant					
	dUCB (N=XXX)		Haplo (N=XXX)		Total (N=XXX)	
System Organ Class	**# Event**	**# Participants**	**# Event**	**# Participants**	**# Event**	**# Participants**
Auditory Disorders						
Blood and Lymphatic System Disorders						
Cardiac disorders						
Endocrine Disorders						
Gastrointestinal Disorders						
General Disorders						
Hemorrhagic Disorders						
Hepatobillary/Pancreas Disorders						
Immune System Disorders						
Investigations						
Metabolism and Nutrition Disorders						
Musculoskeletal and Connective Tissue Disorders						
Nervous System Disorders						
Ocular/Visual Disorders						
Renal and Urinary Disorders						
Respiratory,Thoracic,and Mediastinal Disorders						
Skin and Subcutaneous Tissue Disorders						
Vascular Disorders						
Total						

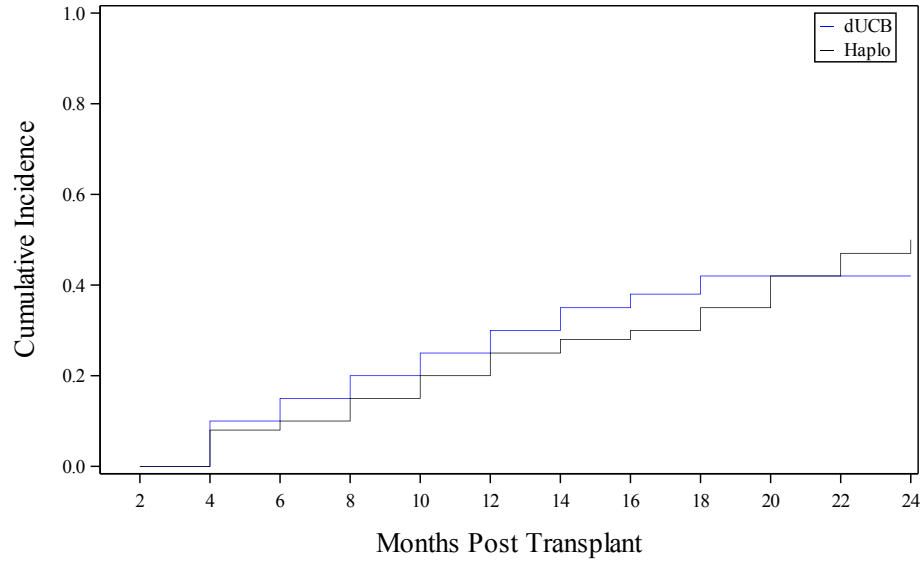
EXHIBIT 1101-13: Incidence of Infections

Infection events will be tabulated by treatment arms

	Treatment Arm		Total
	dUCB	Haplo	
	N %	N %	N %
# Patients Transplanted			
# Patients with Infections			
# Patients with Infection Reports =1 =2 =3 =4 =5 >=6			
Total Infection Events			
Infection Period First 100 Days 100 Days to 1 Year 1 Year to 2 Years			
Maximum Severity by Patient None Grade 2 Grade 3			
Infection by Type (# of patients) Bacterial Viral Fungal Protozoal Other			
Grade 1 CMV Infections through Day 56			

The cumulative incidence of Grade 3 infections will be plotted.

Additional Figure X: Cumulative incidence of first Grade 3 infection



N at Risk

dUCB	**195**	**180**	**172**	**152**	**130**	**122**	**111**	**100**	**87**	**74**	**64**	**60**
Haplo	**195**	**183**	**168**	**150**	**140**	**130**	**117**	**102**	**94**	**80**	**72**	**69**

EXHIBIT 1101-14: Re-admission and Hospitalization

(A) Distribution of Re-admissions

	dUCB (N=XXX)		Haplo (N=XXX)		Total (N=XXX)	
Number of Readmissions	**N**	**%**	**N**	**%**	**N**	**%**
0	XX	XX.X%	XX	XX.X%	XX	XX.X%
1	XX	XX.X%	XX	XX.X%	XX	XX.X%
2	XX	XX.X%	XX	XX.X%	XX	XX.X%
3	XX	XX.X%	XX	XX.X%	XX	XX.X%
>=4	XX	XX.X%	XX	XX.X%	XX	XX.X%

(B) Re-admissions by Visit Period

	dUCB (N=XXX)			Haplo (N=XXX)			Total (N=XXX)		
Time of Readmission Post Transplantation	**N Pts with Admit**	**% Pts with Admit**	**Total Admit**	**N Pts with Admit**	**% Pts with Admit**	**Total Admit**	**N Pts with Admit**	**% Pts with Admit**	**Total Admit**
1-30 Days	XX	XX.X%	XX	XX	XX.X%	XX	XX	XX.X%	XX
31-60 Days	XX	XX.X%	XX	XX	XX.X%	XX	XX	XX.X%	XX
61-100 Days	XX	XX.X%	XX	XX	XX.X%	XX	XX	XX.X%	XX
101-365 Days	XX	XX.X%	XX	XX	XX.X%	XX	XX	XX.X%	XX
>365 Days	XX	XX.X%	XX	XX	XX.X%	XX	XX	XX.X%	XX
Ever	XX	XX.X%	XX	XX	XX.X%	XX	XX	XX.X%	XX

*% is calculated using subjects at risk during time interval

(C) Re-admissions by Primary Reason

	dUCB (N=XXX)		Haplo (N=XXX)		Total (N=XXX)	
Primary Reason for Readmission	**N**	**%**	**N**	**%**	**N**	**%**
Number of Admissions	XX	XX.X%	XX	XX.X%	XX	XX.X%
Infection	XX	XX.X%	XX	XX.X%	XX	XX.X%
Fever	XX	XX.X%	XX	XX.X%	XX	XX.X%
Relapse/Progression	XX	XX.X%	XX	XX.X%	XX	XX.X%
GVHD	XX	XX.X%	XX	XX.X%	XX	XX.X%
Scheduled Procedure	XX	XX.X%	XX	XX.X%	XX	XX.X%
Diarrhea	XX	XX.X%	XX	XX.X%	XX	XX.X%

	dUCB (N=XXX)		Haplo (N=XXX)		Total (N=XXX)	
Primary Reason for Readmission	**N**	**%**	**N**	**%**	**N**	**%**
Organ Failure	XX	XX.X%	XX	XX.X%	XX	XX.X%
Nausea/Vomiting	XX	XX.X%	XX	XX.X%	XX	XX.X%
Trauma	XX	XX.X%	XX	XX.X%	XX	XX.X%
Psychiatric	XX	XX.X%	XX	XX.X%	XX	XX.X%
Bleeding/Hemorrhage	XX	XX.X%	XX	XX.X%	XX	XX.X%
Thrombosis/Thrombus/Embolism	XX	XX.X%	XX	XX.X%	XX	XX.X%
Graft Failure	XX	XX.X%	XX	XX.X%	XX	XX.X%
Seizure	XX	XX.X%	XX	XX.X%	XX	XX.X%
Secondary Malignancy	XX	XX.X%	XX	XX.X%	XX	XX.X%
[1]Other	XX	XX.X%	XX	XX.X%	XX	XX.X%

The number of days alive and not hospitalized will be used to examine the total duration of hospitalization in the first 6 months between treatments using Mann-Whitney tests. Days alive and not hospitalized within the first 6 months will be summarized with median and standard deviation. The box plot will be used to describe the statistics graphically.

	dUCB (N=XXX)	Haplo (N=XXX)	P-value *
Days Participants Alive and Not Hospitalized	XXX(XX.X)	XXX(XX.X)	X.XX

* Note: P-value from Mann-Whitney tests

EXHIBIT 1101-15: Patient-reported Outcomes / Health-related Quality of Life

(A) FACT-BMT

		Treatment Arm									
		dUCB (N=XXX)			Haplo (N=XXX)			Total			
		N	Mean (SD)	Median	N	Mean (SD)	Median	N	Mean (SD)	Median	P-value*
Physical Well-Being (7 Items)	**Baseline**										
	12 Months										
	24 Months										
Social / Family Well-Being (7 Items)	**Baseline**										
	12 Months										
	24 Months										
Emotional Well-Being (6 Items)	**Baseline**										
	12 Months										
	24 Months										
Functional Well-Being (7 Items)	**Baseline**										
	12 Months										
	24 Months										
FACT BMT Concerns (10 Items)	**Baseline**										
	12 Months										
	24 Months										
FACT-G Total (27 Items)	**Baseline**										
	12 Months										
	24 Months										
FACT-BMT Total (37 Items)	**Baseline**										
	12 Months										
	24 Months										
FACT-BMT Trial Outcome Index (24 Items)	**Baseline**										
	12 Months										
	24 Months										

*Note: P-value from two sample t-test

Figures may be included

(B) MOS SF-36

		Treatment Arm									
		dUCB (N=XXX)			Haplo (N=XXX)			Total			
		N	Mean (SD)	Median	N	Mean (SD)	Median	N	Mean (SD)	Median	P-value*
SF-36 PAIN INDEX (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 GENERAL HEALTH PERCEPTIONS (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 VITALITY (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 MENTAL HEALTH INDEX (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 PHYSICAL FUNCTIONING (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 ROLE-EMOTIONAL (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 ROLE-PHYSICAL (0-100)	**Baseline**										
	12 Months										
	24 Months										
SF-36 SOCIAL FUNCTIONING (0-100)	**Baseline**										
	12 Months										
	24 Months										
STANDARDIZED MENTAL COMPONENT SCALE	**Baseline**										
	12 Months										
	24 Months										
STANDARDIZED PHYSICAL COMPONENT SCALE	**Baseline**										
	12 Months										
	24 Months										

*Note: P-value from two sample t-test

Mental Component Scale and Physical Component Scale may be plotted

(C) Global HQL

		Treatment Arm						Total			
		dUCB (N=XXX)			Haplo (N=XXX)						
		N	Mean (SD)	Median	N	Mean (SD)	Median	N	Mean (SD)	Median	P-value*
Overall Health	**Baseline**										
	12 Months										
	24 Months										

(D) EQ-5D Utility

		Treatment Arm						Total			
		dUCB (N=XXX)			Haplo (N=XXX)						
		N	Mean (SD)	Median	N	Mean (SD)	Median	N	Mean (SD)	Median	P-value*
Total Score (5 Items)	**Baseline**										
	12 Months										
	24 Months										

*Note: P-value from two sample t-test

The missing data pattern will be examined using graphical techniques and logistic regression models conditional on survival. At each time point, estimates of the difference in PROs between the treatment groups conditional on survival will be obtained using inverse probability of censoring weighting with independent estimating equations to account for missing data.

Logistic Models of Probability of Missing [PRO score]					
Assessment Time	**Effect**	**N**	**Odds ratio**	**95% CI**	**p-value**
Baseline	**Treatment**				
	dUCB		1.000	-	-
	Haplo				
	Covariate 1				
	Level 1		1.000	-	-
	…				
	Level K				
	Covariate 2				
	Level 1		1.000	-	-
	…				
	Level K				
	…				
12 months	**Treatment**				
	dUCB		1.000	-	-
	Haplo				
	Covariate 1				
	Level 1		1.000	-	-
	…				
	Level K				
	Covariate 2				
	Level 1		1.000	-	-
	…				
	Level K				
	…				
24 months	**Treatment**				
	dUCB		1.000	-	-
	Haplo				
	Covariate 1				
	Level 1		1.000	-	-
	…				
	Level K				
	Covariate 2				
	Level 1		1.000	-	-
	…				
	Level K				
	…				

Inverse Probability of Missingness Weighting-adjusted [PRO score] by Treatment Group					
Assessment Time	**dUCB (N=XXX) N (%)**		**Haplo (N=XXX) N (%)**		
	Mean	**95% CI**	**Mean**	**95% CI**	**P-value***
Baseline					
6 months					
12 months					

* Estimates were obtained by fitting GEE using an identity working correlation matrix, with robust standard errors used to compute 95% confidence intervals and obtain p-values from Wald tests of mean comparisons.

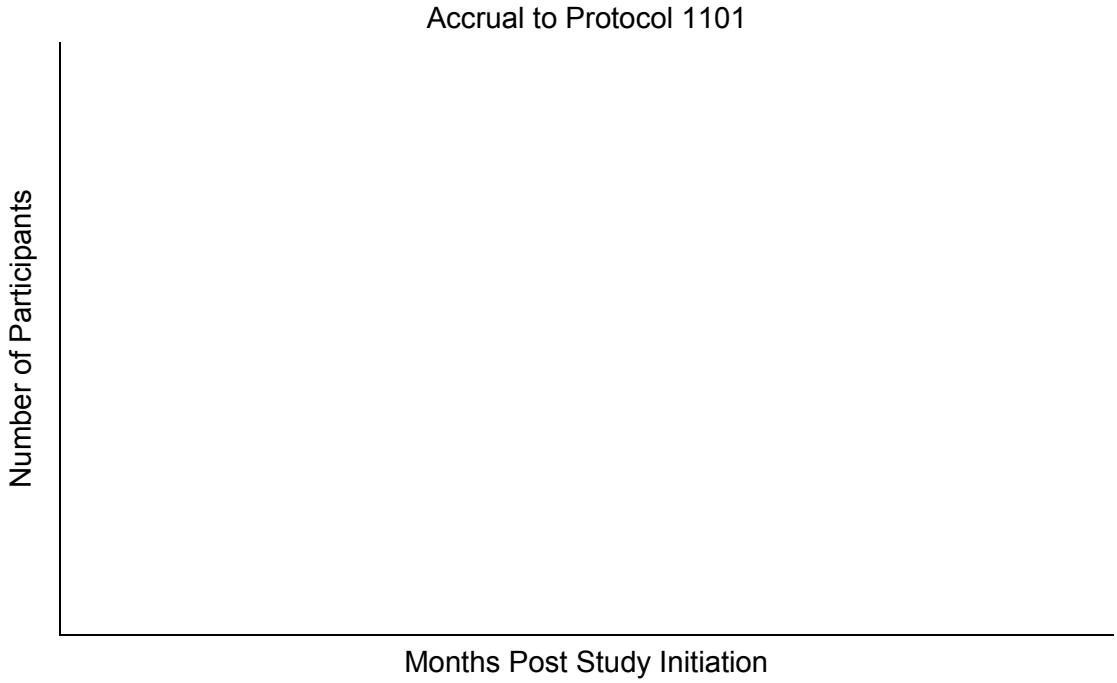
EXHIBIT 1101-16: Subgroup Analysis of 2 Year Progression-free Survival

Effect	N	Odds Ratio/Hazard Ratio	Wald 95% CI	P-value
Disease x Treatment				
dUCB vs Haplo - Leukemia				
dUCB vs Haplo - Lymphoma				
Disease Risk x Treatment				
dUCB vs Haplo - High Risk				
dUCB vs Haplo - Standard Risk				
Age x Treatment				
dUCB vs Haplo - Age group 1				
…				
dUCB vs Haplo - Age group k				

Supplemental Exhibit 1101-1: Enrollment

A table will be provided showing actual monthly accrual for each participating center from study initiation to accrual closure.

A figure will be provided showing projected and actual accrual from study initiation to accrual closure.



Supplemental Exhibit 1101-2: Significant Protocol Deviations

A listing of significant protocol deviations will be provided to describe each deviation.

Supplemental Exhibit 1101-3: Primary Cause of Death

A table summarizing the primary cause of death by treatment group will be provided.

Supplemental Exhibit 1101-4: Adverse Events

A table summarizing the MedDRA-coded System Organ Class (SOC) of the adverse events reported will be provided by treatment group.

Supplemental Exhibit 1101-5: Serious or Grades 3-5 Adverse Events

A table summarizing the SOC of the serious or Grades 3-5 adverse events will be provided by treatment group.

	Grade 3-5 Toxicities Post-Transplant					
	dUCB (N=XXX)		Haplo (N=XXX)		Total (N=XXX)	
System Organ Class	# Event	# Participants	# Event	# Participants	# Event	# Participants
Auditory Disorders						
Blood and Lymphatic System Disorders						
Cardiac disorders						
Endocrine Disorders						
Gastrointestinal Disorders						
General Disorders						
Hemorrhagic Disorders						
Hepatobillary/Pancreas Disorders						
Immune System Disorders						
Investigations						
Metabolism and Nutrition Disorders						
Musculoskeletal and Connective Tissue Disorders						
Nervous System Disorders						
Ocular/Visual Disorders						
Renal and Urinary Disorders						
Respiratory,Thoracic,and Mediastinal Disorders						
Skin and Subcutaneous Tissue Disorders						
Vascular Disorders						
Total						

Supplemental Exhibit 1101-6: Safety Monitoring (Safety Endpoints)

Figure of SPRT to illustrate safety monitoring /stopping guidelines.