



STEM CELL LABORATORY (STCL)



DOCUMENT NUMBER: STCL-PROC-032

DOCUMENT TITLE:

Monitoring Cell Yields after Apheresis Collection

DOCUMENT NOTES:

4C.720 v 02

Document Information

Revision: 04

Vault: STCL-Processing-rel

Status: Release

Document Type: Processing

Date Information

Creation Date: 03 Sep 2014

Release Date: 19 Nov 2014

Effective Date: 19 Nov 2014

Expiration Date:

Control Information

Author: WATE02

Owner: WATE02

Previous Number: STCL-PROC-032 Rev 03

Change Number: STCL-CCR-228

STCL-PROC-032

MONITORING CELL YIELDS AFTER APHERESIS COLLECTION

1 PURPOSE

- 1.1 To describe the process by which apheresis product cell yields are captured, monitored, and results communicated to the clinical team.

2 INTRODUCTION

- 2.1 There are many factors that can affect the yield of cellular products collected by leukapheresis. These factors may include, but are not limited to, patient/donor age, previous chemotherapy treatment, medications, health of the donor/patient, and IV access. If yields are below the expected range, the apheresis nurse or medical technologist, in consultation with the BMT attending physician, should be consulted so the collection record can be reviewed and troubleshooting initiated, if necessary, to determine why the yield was lower than expected (ie. recirculation, etc).

3 SCOPE AND RESPONSIBILITIES

- 3.1 The medical director, the apheresis nurse, medical technologist, and Stem Cell Laboratory manager, in collaboration with the respective adult and/or pediatric BMT attending physicians, are responsible for ensuring that cell yields from apheresis procedures are successfully monitored.

4 DEFINITIONS/ACRONYMS

- | | | |
|-----|------|----------------------------------|
| 4.1 | STCL | Stem Cell Laboratory |
| 4.2 | BMT | Bone Marrow Transplant |
| 4.3 | ABMT | Adult Bone Marrow Transplant |
| 4.4 | PBMT | Pediatric Bone Marrow Transplant |
| 4.5 | QA | Quality Assurance |
| 4.6 | SOP | Standard Operating Procedure |
| 4.7 | N/A | Not Applicable |

5 MATERIALS

- 5.1 N/A

6 EQUIPMENT

- 6.1 N/A

7 SAFETY

- 7.1 N/A

8 PROCEDURE

- 8.1 A signed physician's order, reflecting the CD3, CD34, etc target to be collected, should be available prior to the start of an apheresis procedure so the information is available to the collection staff and cell yields can be monitored.
- 8.2 The STCL routinely reports the apheresis cell yields on any given day to the Apheresis answering machine by calling 668-1054 so the information can be recorded in the Apheresis Log in the Adult BMT Clinic.
- 8.3 The STCL also reports the cell yields to the adult attending physician / clinician, if requested.
- 8.4 The Stem Cell Laboratory will report the final CD34 collection yield to the pediatric attending physician, nurse extender, medical director, etc, upon request, by e-mail and/or text page.
- 8.5 The attending physician or designee is responsible for determining if additional apheresis procedures are needed from the patient/donor based on the CD3, CD34, etc target reported.
- 8.6 The attending physician or designate is responsible for contacting the patient/donor to notify them if additional apheresis procedures are needed and what G-CSF dose (or equivalent) will be administered and when.
- 8.7 The ABMT / PBMT Medical Director or designee is responsible for monitoring daily cell yields along with the apheresis nurse, lab manager, STCL technologist, etc, to determine if the apheresis and/or mobilization plan needs to be modified and/or extended in an effort to collect more cells in order to meet the CD3, CD34, etc, target as ordered.
- 8.8 The final CD3, CD34, etc product yields can be obtained by calling the Stem Cell Laboratory at 668-1169 or 668-1170.
- 8.9 Results are captured on the respective flow cytometry worksheets and processing worksheets for each apheresis collection.
- 8.10 A Cryopreservation Report is generated to provide a cumulative summary of all of the cells collected for a recipient. The report is prepared, product locations confirmed, and the report reviewed and signed by the medical director (or designee) before the recipient is admitted for high dose chemotherapy.
- 8.11 The Cryopreservation Report and *STCL-PROC-033 Cellular Product Storage Location Confirmation* form are included in the patient's admission packet as a final confirmation to ensure that there is an adequate transplant product available for the recipient before starting chemotherapy.

Stem Cell Laboratory / Duke University Medical Center
919.668.1177 (Phone) / 919.668.1185 (Fax)

Patient Duke #:
Patient Name:
Patient ABO/Rh: A.Neg

Adult Cryopreservation Report

Protocol: HighDose Chemo (Carmustine & Melphalan) for Multiple Myeloma Followed by Auto SCT
Mobilization: G-CSF

Collection Date	Wt at Collec (kg)	Cell Count (10 ⁶)	Volume Frozen (ml)	Total Cells Frozen (10 ⁶)	Total Cells per Kg (10 ⁶)	CD 34+ Blue % (10 ⁶)	Total CD 34+ Collected (10 ⁶ kg)	CD 3+ %	# of Bags	Comments
10/17/2012	80.1	317.9	359	124.9	15.59	0.205	3.190		6	PENDING
Lab Procedure: Standard Processing				Cell Type: PBPC						
Cryopreserved? Yes				Notes: PBC = 1, W224812.006346 00Q, CD34+ is adjusted to match CD34+ cells kg reported by SCE Flow assay.						
10/18/2012	80.1	285.4	375	107.0	13.36	0.127	1.690		6	PENDING
Lab Procedure: Standard Processing				Cell Type: PBPC						
Cryopreserved? Yes				Notes: PBC = 2, W224812.006350 00V, CD34+ is adjusted to match CD34+ cells kg reported by SCE Flow assay.						
Total Cells Frozen:		231.9 x 10 ⁶		Total CD 34+ Collected:		4.880 x 10 ⁶ / kg		Total Bags Frozen: 12		

Notes:

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9 RELATED DOCUMENTS / FORMS

- 9.1 STCL-PROC-033 (FRM2) Cellular Product Storage Location Confirmation
- 9.2 STCL-SOP-039 Scheduling Collection, Infusion, and Processing Procedures and Obtaining Orders
- 9.3 STCL-FORM-041 Doctors Orders Adult Stem Cell Transplant Program (for Adult BMT)
- 9.4 STCL-FORM-052 Doctors' Orders For Pediatric Apheresis Using the COBE Spectra
- 9.5 STCL-FORM-053 DUMC Orders for Granulocyte Apheresis Procedures Using the Cobe Spectra

10 REFERENCES

10.1 N/A

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
04	B. Waters-Pick	Section 9 – Updated procedure number references. Section 11 added

Signature Manifest**Document Number:** STCL-PROC-032**Revision:** 04**Title:** Monitoring Cell Yields after Apheresis Collection

All dates and times are in Eastern Time.

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Document Release

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