

University of California, Davis Health System  
Department of Pathology and Laboratory Medicine  
Hematology

## **Peripheral Stem Cell and**

### **Bone Marrow Harvest**

### **Technical Procedure #1548.t**

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#### **PURPOSE**

The purpose is to standardized protocol for performing cell counts and differentials on mobilized peripheral stem cells and bone marrow harvests, and to ensure accurate and prompt testing and reporting of results.

#### **SPECIMEN**

Specimens for **peripheral stem cells** submitted to the hematology laboratory for cell counts and differentials are liquid cell suspensions in EDTA. The specimen must be directly delivered to the Hematology Lab. Progenitor staff will wait for the results.

Specimens for **bone marrow harvest** are collected in an UCDHS operating room in EDTA. Hematology lab should be notified before the procedure takes place. Several numbered interim Bone Marrow Harvest samples may be collected. Last a Final Filtered Bone Marrow will be collected.

Refer to SOP *DxH 600/ 800 and Workcell Operation 1521. t* for operating the DxH 600/ 800

#### **REQUISITIONING**

##### **A. Peripheral Stem Cell**

1. Specimens are requisitioned in the LIS by the Progenitor staff.
2. Tests ordered as follows:
  - a. WBC and WBCO only on post specimens
  - b. WBC, HGB, HCT, PLT, DIFF, and WBCO on other samples
  - c. WBCO is the nucleated cell count which equals the UWBC.

##### **B. Bone Marrow Harvest**

1. Initial collection and interim collections are requisitioned as Bone Marrow Harvest
  - a. WBCO is the nucleated cell count which equals with UWBC.
  - b. Report only the total nucleated cell count (uncorrected WBC) and identify as *'Bone Marrow Harvest #XX\_* in comments.

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2. Final filtered Bone Marrow
  - a. Requisitioned as Bone Marrow Harvest Final and includes WBC, WBCo, HGB, HCT, PLT and Bone Marrow Differential.
  - b. WBC count should transmit from analyzer. Enter this value in the HPCL WBC position.
  - c. Report the total nucleated cell count (uncorrected WBC).
  - d. If the platelet count exceeds linearity, the result should be reported with comment '*Result exceeds instrument linearity and has not been confirmed due to insufficient specimen*'.

## PROCEDURE

### A. Peripheral Stem Cell

1. Samples are run in the Single Sample Presentation. Results are verified as is, with the exception of:
  - a. WBC above linearity ( $300 \times 10^3$  ul) must be diluted and rerun.
  - b. HGB below linearity (0.1 g/dl) is reported as <0.1 g/dl
  - c. HCT below linearity (2.0%) is reported as <2.0%
  - d. Platelet above linearity ( $3000 \times 10^3$  ul) will not be diluted. Report as '*Results exceed instrument linearity and has not been confirmed due to insufficient specimen*'
2. WBCO is manually entered (UWBC)
3. A printout is handed to Progenitor staff.
4. Wedge smear prepared and stained per lab protocol
5. Differentials must be done by qualified CLS.

### B. Bone Marrow Harvest

1. Requisitioned as Bone Marrow Harvest
  - a. Report only the total nucleated cell count (uncorrected WBC) comment automatically added stating '*Bone Marrow Harvest # \*\*\*\* \_*'.
  - b. After clicking into the comment choose f2 and \*\*\* becomes highlighted. Choose harvest number followed by enter.

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2. Final Filtered Marrow
  - a. Requisitioned as Bone Marrow Harvest Final
  - b. Samples are run in the Singe Sample Presentation.
  - c. Enter value from WBC field into HPCL WBC and uncorrected WBC in the total nucleated cell count (uncorrected WBC) Comment '*This specimen is not peripheral blood, specimen is Final Filtered Bone Marrow collected for transplant.*' Is automatically appended to sample.
  - d. If the platelet count exceeds linearity, the result should be reported with comment '*Result exceeds instrument linearity and has not been confirmed due to insufficient specimen*'.
  - e. Prelim verify hemogram components and a bone marrow differential is automatically ordered.
    - i. Wedge smears are prepared and stained according to Bone Marrow protocol.
    - ii. Bone Marrow differentials are performed using keyboard. 500 cells are counted.
  - f. On specimen tree highlight sample ID and final verify both HPCL Hematological Analysis and Bone Marrow Differential.

