Peripheral Blood Stem Cell Spec Testing Technical Procedure #1548.t

Purpose

A standardized protocol for performing cell counts and differentials on mobilized peripheral stem cells and placental cord blood is required to ensure accurate and prompt testing and reporting of results

Specimen

Specimens submitted to the hematology laboratory for cell counts and differentials consist of liquid cell suspensions.

Reagents

- Bovine Albumin- 22% Protein Concentration ph 7.2-Ortho Diagnostic Systems.
- Normal saline

Equipment

- Coulter LH 780 with reagents
- Wrights Stain stainer
- Vortex
- Glass microscope slides
- Microscope
- Calibrated pipettes

Quality Control

- Coulter LH 780 refer to LH780 Procedure #1510.
- Stain quality is evaluated on a slide-by-slide basis by the CLS.

Specimen Requirements

- 0.5 ml of specimen

- The specimen must be delivered directly to the Hematology Laboratory. Progenitor Lab Staff will wait for results.

Requisitioning

- Specimens are requisitioned in the LIS by the Progenitor Lab staff. Lab number is 734-3260
- Tests ordered are as follows:
    - WBC and WBCO only on post specimens
    - WBC, HGB, HCT, PLT, DIFF, and WBCO on other samples.
        - WBCO is NUC CELL COUNT which is uWBC

Procedure

- Cell Counts – Performed STAT while Progenitor Lab Staff is waiting
    - Mix specimen well - both by inversion and gentle vortexing.
    - Check specimen for clot using applicator sticks.
    - Run specimen on Coulter LH780 in the **SECONDARY MODE**, carefully observing the aspiration to ensure that it does not short-sample.

IMPORTANT: If there are any problems obtaining cell counts due to inadequate specimen, immediately notify Progenitor Lab staff who may be able to provide additional sample.

    - WBC
        - If the LH780 WBC count exceeds the linearity limit (>300 on the LH780), dilute it quantitatively using normal saline and rerun, correcting for the dilution effect, to obtain the count.
        - The LH780 WBC corrected and uncorrected are both reported with no attempt to make further corrections.
            - ☐ The corrected WBC is reported as WBC.
            - ☐ The uncorrected WBC is reported as the NUC CELL COUNT (WBCO).

- Platelet
  - ☐ If the platelet counts exceeds linearity (>3000), the instrument count should be reported with the comment "Result exceeds instrument linearity and has not been confirmed due to insufficient specimen."

- Reporting Results
  - Report results directly from the LH780 (no corrections)
    - ☐ Report the WBC, HGB, HCT, PLT and WBCO.
  - Give results to the waiting Progenitor Lab Staff member.

- Slide Preparation and Staining
  - Prepare a wedge smear, labeled according to lab protocol.
  - Stain according to Peripheral Blood stain protocol.
  - Check smears for stain quality. Remake unacceptable smears, using one drop of albumin to 4-5 drops of specimen, if needed, due to cell fragility

- Differentials:
  - Differential must be done by **qualified** CLS.
  - Perform a 100 WBC cell differential. Do not count nucleated RBCs.
  - Completed smears are saved in the progenitor box.
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Reference Range

Reference ranges have not been established for bone marrow/stem cell/cord blood cell counts and differentials, and are not reported.

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Procedure History

Date	Written/Revised By	Revision	Approved Date	Approved By
11/23/05	J Cannon	New	11/23/05	Kim Janatpour MD
5/17/06	J Cannon	Spec Handling	5/18/06	Kim Janatpour MD
9/18/06	J Cannon	Change Proc No. (Prev 1550) Modified Diff	9/18/06	D Dwyre MD
		Annual Review	11/5/07	D Dwyre, MD
		Annual Review	07/03/08	D Dwyre, MD
		Annual Review	10/27/09	D Dwyre, MD
		Annual Review	10/15/10	D Dwyre, MD
		Biannual Review	8/24/12	D Dwyre, MD
		Biannual Review	10/1/14	D Dwyre MD
10/2015	L Gandy	Minor updates		