Beaumont

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Area: *Laboratory-Hematology*
Key Words:
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Albumin Smear For Smudge Cells- RO

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This procedure gives steps on how to make an albumin smear when smudge cells are present.

II. PRINCIPLE:

When smudge cells on a differential are 10% or greater, the differential results may be erroneous. A repeat differential count on an albumin slide is necessary. (Smudge cells may represent fragile lymphocytes of CLL/ Lymphoma, atypical lymphocytes, blasts or even neutrophils from lipemic specimens.) Albumin protects the fragile cells from rupturing when the smear is being made.

III. SPECIMEN COLLECTION AND HANDLING:

A. Type:
   1. Whole blood collected in a vacutainer. This is the preferred sample.
   2. Capillary blood collected in a microtainer.

B. Anticoagulant:
   1. K_2EDTA

C. Amount:
   1. Whole blood
      a. Minimum sample size is 2.0 mL
      b. Optimum sample size is 4.0 mL
   2. Capillary blood
      a. Minimum sample size is 300 mcL
      b. Optimum sample size is 500 mcL

D. Special Handling:
   1. Specimen must be well mixed for minimum of two minutes before being analyzed.

E. Timing:

1. Albumin smears made from EDTA blood should be prepared within 2-3 hours after collection and stored at room temperature.

F. Criteria for Unacceptable Specimens:

1. Anticoagulated specimens containing clots are unacceptable and must be redrawn.

IV. EQUIPMENT:

A. 10 x 75 mm test tube

B. Microscope slides

V. REAGENTS:

A. **22% Bovine Albumin** – Per known stability and frequency of use, reagent expiration is listed on the manufacturers container or until expected performance is not achieved (i.e. cloudiness, color change, etc.). If expected performance is not achieved, discard and open new vial of reagent.

VI. QUALITY CONTROL (QC):

Differential / staining QC is performed daily and documented on the appropriate log.

VII. PROCEDURE:

A. In a small test tube, gently mix 1 drop of 22% Bovine albumin with 4-6 drops of blood.

B. Remake smear and stain in usual manner.

C. Repeat differential.

D. Evaluate RBC and Platelet morphology from original smear. (Morphology will be distorted on the albumin smear.)

E. If the albumin smear differential was performed to correct for smudged **lymphocytes** typical of chronic lymphocytic leukemia (CLL), select Smudge cells in WAM, then add “Present”. Do Not add “Present” if the albumin smear was made to correct for smudged neutrophils or lymphocytes in cases not suspected to be CLL related.

F. Internal WAM comment, “Differential performed on albumin smear.” should be added if the albumin smear was used to correct for other fragile smudged cells in cases not suspected to be CLL related. If sent for pathologist review indicate albumin smear differential was performed.

Attachments

No Attachments

Approval Signatures

Step Description	Approver	Date
CP Chief Medical Director	Peter Millward: Chief, Pathology Service Line	4/23/2021

Step Description	Approver	Date
Hematology Medical Director Designee	Ann Marie Blenc: System Med Dir, Hematopath	4/23/2021
Policy and Forms Steering Committee Approval (if needed)	Gail Juleff: Project Mgr Policy	4/23/2021
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