PROCEDURE
Corewell Health East - Albumin Smear for Smudge Cells - All Beaumont Hospitals

This Procedure is Applicable to the following Corewell Health sites:
Corewell Health Beaumont Grosse Pointe Hospital, Corewell Health Beaumont Troy Hospital, Corewell Health Dearborn Hospital, Corewell Health Farmington Hills Hospital, Corewell Health Taylor Hospital, Corewell Health Trenton Hospital, Corewell Health Wayne Hospital, Corewell Health William Beaumont University Hospital (Royal Oak)

Applicability Limited to: N/A

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Functional Area: Clinical Operations, Laboratory

Lab Department Area: Lab - Hematology

1. Principle
This procedure gives steps on how to make an albumin smear when smudge cells are present. If ≥10% smudge cells are present in a differential, 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 or degraded specimens. Albumin protects the fragile cells from rupturing when the smear is being made.

2. Responsibility
Personnel who have completed the competency requirements will perform this testing.

3. Definitions
A. Chronic lymphocytic leukemia (CLL)

4. Specimen
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 µL
      b. Optimum sample size is 500 µL

D. Special Handling:
   1. Specimen must be well mixed before creating the albumin and blood mixture.

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E. Timing:
   1. Albumin smears made from EDTA blood should be prepared within 2-3 hours after collection and stored at room temperature. Exceptions may apply for add-on and Outreach orders.

5. Reagent/Equipment Needed
A. 10 x 75 mm test tube
B. Microscope slides
C. 22% Bovine Albumin
   1. Stored at 4°C, brought to room temperature before use

6. Quality Control
Differential / staining QC is performed daily and documented on the appropriate log. For low volume labs, staining QC is performed as needed.

7. Procedure
A. In a small test tube, gently mix 1 drop of 22% Bovine albumin with 4-6 drops of blood.
B. Make a smear and stain in usual manner. Label albumin smear with patient's last name, patient's first initial, sample ID, collection date, and identify as an albumin slide.
C. Repeat differential.
D. Evaluate RBC and Platelet morphology from the 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 the middleware, then add *"Present"*. Do Not add *"Present"* if the albumin smear was made to correct for smudged neutrophils or lymphocytes not suspected to be CLL related.
F. Internal middleware 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.
G. If sent for pathologist review, indicate albumin smear differential was performed. Send original smears and albumin smears for pathologist review.

8. Revisions
Corewell Health reserves the right to alter, amend, modify or eliminate this document at any time without prior written notice.

9. Procedure Development and Approval

Document Owner:
Larah Crawford (Sr Safety Specialist)

Writer(s):
Elizabeth Smerczak (Medical Technologist Lead)

Reviewer(s):
Edgar Chawan-Martinez (Medical Technologist Lead), Joseph Zatkoff (Medical Technologist Lead), Kristin Murphy (Medical Technologist Lead), Lillian Reid (Medical Technologist Lead), Malak Saad (Medical Technologist Lead), Paul DeRonne (Medical Technologist Lead), Rachel Eikenberry (Medical Technologist Lead), Richard Quick (Medical Technologist Lead), Sara Wagner (Medical Technologist Lead), Tamara Sabih (Medical Technologist Lead), Udayasree Bartley (Medical Technologist Lead)

Approver:
Ann Marie Blenc (System Med Dir, Hematopath), Ashley Beesley (Mgr, Laboratory), Brittnie Berger (Dir Sr, Lab Operations), Christopher Ferguson (Dir, Laboratory Services), Elzbieta Wystepek

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(Dir, Laboratory Services), Hassan Kanaan (OUWB Clinical Faculty), Helga Groat (Mgr, Laboratory), Jennifer Yaker (Mgr, Laboratory), Jeremy Powers (Chief, Pathology), John Pui (Chief, Pathology), Kelly Walewski (Mgr, Laboratory), Kristen DiCicco (Mgr, Laboratory), Kristin Russell (Mgr, Laboratory), Masood Siddiqui (Staff Pathologist), Megan Masakowski (Mgr, Division Laboratory), Muhammad Arshad (Chief, Pathology), Ryan Johnson (OUWB Clinical Faculty), Sarah Britton (VP, Laboratory Svcs), Stephanie Mullins (Supv, Laboratory), Subhashree Mallika Krishnan (Staff Physician)

10. Keywords

Not Set