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Quick Slide Plus II Stainer-RO

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This procedure provides instructions on the Quick Slide Plus II Stainer operation and maintenance.

II. INTRODUCTION:

The Quick Slide Stainer is an automated instrument that utilizes a Wright Giemsa process for staining blood smears. It may also be used for staining bone marrow slides and other biological samples. The new version of this stainer, Quick Slide Plus II Stainer, has an added soft agitation feature before the buffer is drained, resulting in a cleaner slide.

III. PRINCIPLE:

Slides stained by the Quick Slide Plus II Stainer are used for differentiation and morphologic evaluation of cellular elements of whole blood. Wright stain is a Romanowsky neutral dye stain based upon combination of methylene blue azures as the basic dye component and eosin as the acid dye component. Romanowsky modified Ehrich's earlier finding of a neutral dye which offered the ability to identify acidophilic, basophilic, and neutrophils granules of leukocytes.

IV. SPECIMEN COLLECTION AND HANDLING:

Type	A. Whole blood collected in a 4 mL Hemogard vacutainer. This is the preferred sample.-OR- B. Capillary blood collected in an EDTA microtainer.
Anticoagulant	K_2EDTA
Amount	A. Whole blood: 1. Minimum sample size is 2.0 mL. 2. Optimum sample size is 4.0 mL. B. Capillary blood 1. Minimum sample size is 300 µL.

	2. Optimum sample size is 500 µL.
Special Handling	A. Specimen must be well mixed for minimum of two minutes before being analyzed. B. Samples containing gross hemolysis, lipemia, icteria, cold agglutinins or cryoglobulins may affect smear quality.
Timing	Specimen is stable for 8 hours at room temperature; 72 hours at 4°C.
Criteria for Unacceptable Specimens	Specimens containing clots, hemolysis or inappropriate volume are unacceptable and must be redrawn.

V. SUPPLIES:

A. **Reagents**

1. **Quick Slide Stain Pack (3 x 500 mL)**

Stain	Buffer	Rinse
Wright Stain 6g/L	Sodium Phosphate Dibasic 1g/L	Methanol 20%
Giemsa Stain 2g/L	Distilled Water	Distilled Water
Eosin Y Stain	Wetting Agent	
Methanol		

a. **Storage:** Store products at room temperature (25-30°C). Protect from exposure to water vapor, chemical fumes and direct sunlight.

b. **Stability:** Unopened reagents may be used until the expiration date on the label. Opened reagents are stable for 60 days. Reagents displaying any signs of instability should not be used.

WARNING: Stain flammable and poisonous. Potential human carcinogen. May be fatal if ingested. Vapor harmful. Cannot be made non-poisonous. Avoid prolonged breathing of vapor. Use only with adequate ventilation. Causes irritation to eyes, skin and respiratory tract.
Recommended: Wear gloves, lab coat, and safety glasses for protection.

B. **Equipment**

1. Quick Slide Plus II Stainer
2. Glass microscope slides

VI. MAINTENANCE:

Refer to Attachment A.

VII. PROCEDURE:

A. **Setup:**

1. Before plugging the wall transformer into an AC outlet, connect the round barrel receptacle to the

instrument. The connector is located on the left-hand side of the instrument directly under the ON/OFF switch.

2. Plug the wall transformer in and turn the ON/OFF switch to the OFF position.

B. **Initial Start-Up**

1. Place the Reagent Pack on the shelf behind the instrument and connect the Reagent Pack phone type connector to the receptacle on the right-hand side of the instrument. If the Reagent Pack is not plugged in when the unit is turned on, the message “SELF-TEST FAILURE: Pack not connected” will appear. Turn unit off, connect Reagent Pack and turn unit on to continue.
2. Remove the caps from the Reagent Pack and insert the color-coded tubing cannulas in the appropriate bottles. Do not remove the heat seals on the bottles. Push the tubing cannulas through the heat seals at an angle being careful not to damage the silicone tubing.
3. Place the RED waste tube into the waste container.
4. Turn the instrument on and the instrument will go through self-test and then display “PRIME” or “CONTINUE”.
5. The unit needs to be primed at least twice before staining slides.

C. **Stain Procedure**

1. Press F4. Then choose the type of stain you want to do and press F1 = Blood or F4 = Marrow.
2. Press F4 and the cuvette will be prepared.
3. Load the slide and press STAIN.
4. When done, remove slide and press F4 to continue.
5. Allow slide to dry thoroughly before viewing.

CAUTION: When loading and unloading the slides, be sure you pull it all of the way out STRAIGHT up. Otherwise, the slides can break inside the slide holder resulting in unit malfunction. It will also produce sharp objects that could injure operators.

D. **Reagent Replacement**

1. Turn the instrument OFF.
2. Remove the cannulas from the empty Reagent Pack.
3. Unplug the phone connector from the instrument and remove the empty Reagent Pack. Don’t forget to empty the waste container at this time.
4. Place the new Reagent Pack on the instrument, connect the phone connector, and place the color-coded cannulas in the new reagent bottles.
5. Turn the instrument ON and the Self-Test menu will be displayed. The cuvette is automatically drained and the Main Menu is displayed.
6. It is best to prime the unit twice before staining.

NOTICE: When changing reagent kits, it is important to regularly check the waste bottle. It is used repeatedly and requires being emptied. If not emptied, it could result in an overflow of reagent that could potentially lead to possible damage to the unit’s surroundings.

VIII. QUALITY CONTROL:

Daily, examine a stained smear from the routine workload for smear and stain quality. **Document results on the appropriate log.**

A. Review the blood smears macroscopically for acceptability:
    1. Smears are sufficient length (greater than half the length of the unfrosted portion of the slide).
    2. The feathered edge becomes gradually thinner without streaks, holes, or tails.
    3. Even, consistent staining of blood smear.

B. Review the blood smears microscopically for acceptability:
    1. Relatively even distribution of cellular elements.
    2. Acceptable morphology within the working area of the slide.
    3. None or very little artifact of the cell morphology, (e. g., “punched-out” RBCs, smashed WBCs.)
    4. None, or very little stain precipitate or debris.
    5. The staining is consistent and imparts the characteristic cytoplasmic color differences and distinct nuclear chromatic patterns of the whole spectrum of blood cells. Acceptable stains will display the following characteristics.
        a. RBCs should be pink to orange. There should be good differentiation between normochromic, hypochromic, and polychromatic cells.
        b. Lymphocytes will display dark purple nuclei with varying shades of blue cytoplasm.
        c. Neutrophils will display dark purple nuclei, with light pink cytoplasm and lilac granules.
        d. Monocytes will show lighter purple nuclei. The cytoplasm of the monocytes will be gray-blue with reddish granules.
        e. Eosinophils show bright orange granules in the cytoplasm.
        f. Basophils display dark blue granules in the cytoplasm.
        g. Platelets will be violet to purple.

IX. LIMITATIONS:

A. Improper technique used for obtaining specimen or making blood smear can alter results.

B. Very high humidity can alter results or result in producing the appearance of artifacts.

X. NOTES:

A. Concentration of stain pack was obtained from personal communication with ENG Scientific, Inc., 2/27/06.

B. PRIME the stain on MONDAYS as it is not being used for two days.

C. Take the slide out of the stainer right away. Do not let it sit in the stainer.

D. When the stainer is ready (the compartment is filled), put the slide in right away.

E. Remember to clean the chamber when you get precipitate.

F. Document all Quick Slide Plus stain pack reagent changes and maintenance on the appropriate log.

XI. REFERENCES:

A. GG&B Company, 3411 McNeil, Suite 302 Wichita Falls, TX 76308; 1998.

B. Quick Slide Stain Pack product insert.

C. Wintrobe, Maxwell M., Clinical Hematology, Lea and Febiger, 1961.

Attachments

ATTACHMENT A - MAINTENANCE.pdf
ATTACHMENT B - SET FILL LEVELS.pdf
ATTACHMENT C - TO CHANGE TIMING.pdf
ATTACHMENT D - EXTENDED METHANOL CLEANING.pdf

Approval Signatures

Step Description	Approver	Date
	Ann Marie Blenc: System Med Dir, Hematopath	1/10/2022
Hematology Medical Director Designee	Ann Marie Blenc: System Med Dir, Hematopath	1/10/2022
Policy and Forms Steering Committee Approval (if needed)	Michele Sedlak: Medical Technologist Lead	1/7/2022
Policy and Forms Steering Committee Approval (if needed)	Gail Juleff: Project Mgr Policy	12/7/2021
System Manager	Rebecca Bacarella: Mgr Laboratory	9/30/2021
	Michele Sedlak: Medical Technologist Lead	9/13/2021

Applicability

Royal Oak