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Beaumont

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Document Contact	Myrna Harbar: Medical Technologist Lead
Area	Laboratory-Chemistry
Applicability	All Beaumont Hospitals

Urinalysis Procedure for Analyzing Bloody Specimens

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

A. When a moderately bloody urine sample is received in Urinalysis, the specimen needs to be manually processed, because the blood will cause color interference with the ~~Siemens Multistix~~urine chemistry reagent strip. Addition of 3% acetic acid at the time of microscopy will cause lysis of the red cells, allowing better visualization of yeast and helping in the differentiation of white cells from renal tubular epithelial cells.

II. SPECIMEN COLLECTION AND HANDLING:

A. Specimen must be a fresh, well-mixed, uncentrifuged urine. It is recommended that testing be done within one to two hours after voiding. Otherwise, immediately refrigerate the specimen and return to room temperature before testing.

III. REAGENTS:

A. ~~Bayer Multistix 10 SG (#2161)~~

B. ~~3% Acetic Acid~~

C. Reagent strips utilized by the lab's standalone urine analyzer.

D. ~~In a 100 mL volumetric flask, add 3.0 ml of 100% Glacial Acetic Acid to 50 mL of deionized H_2O. Mix well (do not shake), once mixed, quantum satis (QS) to 100 mL with deionized H_2O. Using glass dropper bottles make 2-3 aliquots. Label aliquot bottles. Dispose of remaining~~ 3% Acetic Acid~~. Store aliquots at room temperature. **Stable for 10 years.**~~

1. To make 3% Acetic Acid: In a 100 mL volumetric flask, add 3.0 ml of 100% Glacial

Acetic Acid to 50 mL of deionized H_2O. Mix well (do not shake), once mixed, quantum satis (QS) to 100 mL with deionized H_2O. Using glass dropper bottles make 2-3 aliquots. Label aliquot bottles. Dispose of remaining 3% Acetic Acid. Store aliquots at room temperature. **Stable for 10 years.**

IV. PROCEDURE:

A. Centrifuge the urine specimen

1. ~~If the supernatant is yellow or dark yellow, then process the specimen on the Clinitek Advantus.~~If the supernatant is yellow or dark yellow, then process the specimen on your stand alone instrument.
    a. Add the comment ".bldyua" (Bloody specimen. Urine chemistry testing was performed on the supernatant of a centrifuged specimen. Interpret results cautiously).
2. If the supernatant remains red, ~~then dip the specimen by hand using Bayer Multistix.~~ Do not run on ~~the Clinitek Advantus or IRICELL~~your stand alone instrument or Sysmex UN System.
    a. Report out the color~~,~~ and clarity ~~and readable Multistix reactions~~. Note “color interference” for ~~any non-readable tests~~Glucose, Bilirubin, Ketone, Blood, pH, Protein, Urobilinogen, Nitrite and Leukocytes.
    b. Perform and report the ~~following:~~
        ~~i. Specific Gravity by refractometer~~

        Specific Gravity by refractometer.

B. Perform a manual microscopic exam of the sediment.

1. Place one drop of urine sediment and one drop of 3% acetic acid on slide, cover with cover slip and read.

V. REFERENCE RANGE:

Specific Gravity	1.005 - 1.030
Nitrite	Negative
pH	5.0 - 8.0
Protein	Negative
Glucose	Negative
Ketones	Negative
Urobilinogen	<2.0 EU/dL
Bilirubin	Negative
Hemo	Negative
Microscopic examination of sediment	
WBC	0-5 cells/hpf

RBC	0-2 cells/hpf
~~Hyaline Casts~~ Hyaline Casts Epithelial Cells Bacteria	~~0-2 cells/hpf~~ 0-2 cells/lpf 0-5 cells/hpf Negative

VI. INTERFERING SUBSTANCES:

A. Bloody specimens will cause color interference with the ~~Bayer Multistix~~urine chemistry reagent ~~strip~~strips.

Approval Signatures

Step Description	Approver	Date
Medical Directors	Muhammad Arshad: Chief, Pathology	10/22/2024
Medical Directors	Jeremy Powers: Chief, Pathology	10/15/2024
Medical Directors	Ann Marie Blenc: System Med Dir, Hematopath	10/11/2024
Medical Directors	Ryan Johnson: OUWB Clinical Faculty	10/11/2024
Medical Directors	John Pui: Chief, Pathology	10/11/2024
Medical Directors	Hassan Kanaan: OUWB Clinical Faculty	10/11/2024
Medical Directors	Masood Siddiqui: Staff Pathologist	10/11/2024
Policy and Forms Steering Committee Approval (if needed)	Myrna Harbar: Medical Technologist Lead	10/10/2024
	Caitlin Schein: Staff Physician	10/10/2024
	Nga Yeung Tang: Tech Dir, Clin Chemistry, Path	10/3/2024
	Qian Sun: Tech Dir, Clin Chemistry, Path	10/2/2024
	Jennifer Yaker: Mgr, Laboratory	10/2/2024

Ashley Beesley: Mgr, Laboratory	8/27/2024
Sharon Cole: Mgr, Laboratory	8/15/2024
Kristen DiCicco: Mgr, Laboratory	8/2/2024
Michelle Alexander: Medical Technologist Lead	7/31/2024
Katherine Persinger: Mgr, Laboratory	7/18/2024
Kristin Russell: Supv, Laboratory	7/15/2024
Leah Korodan: Mgr, Division Laboratory	7/9/2024
Myrna Harbar: Medical Technologist Lead	6/14/2024

Applicability

Dearborn, Farmington Hills, Grosse Pointe, Royal Oak, Taylor, Trenton, Troy, Wayne