

Name: _____ Seat # _____

Do not write in pencil (use pen).

Date: ___/___/___ Periods _____

Do not use Liquid Paper (draw one line through error).

Please staple all work.

Routine Urinalysis with Microscopic

Lab Title

4

Lab Number

Purpose: The purpose of this lab is to learn how to identify sediment found in urine and learn the clinical significance of urine sediment.

Materials:

- | | | |
|--------------------------------|-------------------------------|--------------------------|
| 1. cup to collect urine sample | 6. (2) coverslips | 11. Laboratory Coat |
| 2. centrifuge | 7. test tube rack | 12. Disinfecting wipes |
| 3. plastic pipette | 8. Microscope | 13. Biohazard containers |
| 4. centrifuge tube | 9. Sedi-stain | 14. Refractometer |
| 5. (1) microscope slide | 10. Working Mat (paper towel) | 15. Beaker of water |

Procedure(s):

See student handout and pictures to help aid in your procedure.

Microscopic Exam of Urine Sediment

1. Collect a fresh urine sample. Obtain a centrifuge tube and put your seat number at the very top of tube.
2. Pour or pipette 12 ml of urine into the centrifuge tube.
3. Centrifuge tube for 5 minutes.

Centrifuge Procedure:

- a. After pouring 12 ml of urine in tube, put in centrifuge and balance your tube with 12 ml of fluid in the same type of tube (pair up with another student).
 - b. Position tubes directly across from each other.
 - c. The teacher will demonstrate how to close and lock lid, and set timer and speed.
 - d. Centrifuge will stop automatically.
 - e. Make sure the centrifuge comes to a complete stop before opening. (Remember the movie OutBreak)
- ***While your urine is spinning, review how to use the microscope properly (see lesson in lab manual). Practice finding the letter "a" on a plane microscope slide. Make sure you can see the letter "a" on 10x and 40x before reading your urine sample. If you cannot find the "a," first make sure you are using proper technique, then try another microscope if necessary.*****
4. Remove your sample, and go to sinks #1 or #2 and turn centrifuge tube upside down. Count to five.
 5. Turn your tube right side up and resuspend sediment by mixing with pipette (place the pipette in urine sediment and squeeze bulb).
 6. Using the same pipette, put a drop of sediment on one end of the slide and cover with coverslip .
 7. Remove pipette from tube, place one drop of sedi-stain in tube and mix using pipette. Place one drop of stained sediment on the opposite end of the microscope slide. Cover with a cover slip.
 8. Observe urine on 10 X with low light. Focus on a squamous epithelial cell, place it in center view then observe urine on 40 X or 45X with low light. Quantitate urine sample using 40x or 45x.
 9. If you can not find your sample and you know your microscope is working, dim your light source.
 10. Replace and dispose of all supplies and equipment according to instructor (also see lab disposal book).
 11. Disinfect work area, chair, test tube rack and any other item that may be contaminated with body fluids.

Raw Data/ Calculations: N/A

Results for physical and chemical properties of urine (Routine UA Results) (10 points):

Color _____	Blood _____	Transparency _____	pH _____	
Glucose _____	Protein _____	Bilirubin _____	Urobilinogen _____	
ketones _____	Nitrite _____	Spec. Gravity _____	Leukocytes _____	Odor _____

Results Microscopic (10 points): Interpret Results provided by teacher in the space below.

Write your microscopic results on your person lab data sheet.

Quantitation of Sediment using 40X HPF	Type of Sediment	Quantitation of Sediment using 40X HPF	Type of Sediment

Normal Ranges for Physical and Chemical Properties (10 points):

Color _____ Blood _____ Transparency _____ pH _____
 Glucose _____ Protein _____ Bilirubin _____ Urobilinogen _____
 ketones _____ Nitrite _____ Spec. Gravity _____ Leukocytes _____ Odor _____

Normal Ranges for Microscopic(10 points):

WBC's _____ RBC's _____ Squamous epithelial _____ Renal epithelial _____
 Yeast _____ Mucus _____ Bacteria _____ Cast _____
 Crystals _____

Conclusions (20 points): Write a sentence stating if your results were normal or abnormal. If abnormal, state the disease associated with your findings.

Clinical Significance (20 points): State the diseases and /or conditions found in urine.

RBC: _____

WBC: _____

Yeast: _____

Bacteria: _____

Renal epithelial cells: _____

Urine casts: _____

Colors: red, orange or gold, white, black _____

Odor _____

Transparency: cloudy or turbid, hazy, smokey, milky _____

Specific gravity (hyposthenuria, hypersthenuria
 isosthenuria _____

pH: _____

Blood: _____

Bilirubin: _____

Ketones: _____

Glucose: _____

Protein: _____

Urobilinogen: _____

WBC'S: _____

Nitrate: _____

Questions (20 points):

1. What is the most frequently seen parasite in urine specimens? _____
2. What stain was used in order to see your urine sediment better? _____
3. Describe how the hormone insulin helps maintain normal blood levels. What happens when insulin is absent or defective?

4. Describe what happens when fats are used as an energy source instead of carbohydrates.

5. Do vegetarians usually have an alkaline or acid pH? _____
