

Urinalysis Lab



Urine was collected from the scene of a crime as well as from 4 suspects arrested near the crime scene. The Windsor Police have asked you to examine the samples and determine who was present at the scene of the crime.

The suspects all have prior records and have previous urine samples on file with the police.

Below is the information on file:

Suspect A – Taking heart medication which raises blood pH and causes dehydration

Suspect B – History of high blood pressure and takes aspirin daily (lowers blood pH)

Suspect C – MMA fighter, known to have chronic kidney damage

Suspect D – A diabetic and former professional athlete, was banned from competitive sport due to tampering with urine samples during testing

Procedures:

A) Make **predictions** regarding what will be in each suspect's urine

B) Test the Crime Scene Sample First

1. Examine the urine carefully by eye.
 - a. Comment on the **colour** of the sample – use words like **YELLOW**, **AMBER**, **DARK**, **PALE**.
 - b. Note how **clear** the sample is (clear or cloudy).
2. The next job is to find out if the sample contains **protein**. Protein leaks into the urine if the kidney is damaged or if an individual has chronic high blood pressure.
 - a. Divide the sample equally between two test tubes.
 - b. Put one test tube into the hot water bath and leave the other test tube at room temperature.
 - c. After a few minutes, take the test tube out of the water bath, and compare the heated and unheated urine.
 - d. If the heated sample is **cloudier**, it contains protein.
 - e. Flush away the heated urine. **Keep the unheated urine.**
3. Find out the **pH** of the unheated urine.
 - a. Dip a piece of pH paper into the urine.
 - b. Compare the colour with the colour chart.
4. Find out if the urine contains **glucose** using Benedict's solution.
 - a. Add 10 drops of benedict's solution to the sample
 - b. Place the test tube in the hot water bath for 4-5 min
 - c. If the sample turns **orange/yellow** colour glucose is present

C) **Repeat steps 1-4 for all suspect samples**

Name: _____

Predictions & Reason(s) WHY: ***Not all boxes will or should be filled in***

	Suspect A	Suspect B	Suspect C	Suspect D
Colour				
Odour				
Protein				
pH				
Glucose				

Urine Samples:

	Crime Scene	Suspect A	Suspect B	Suspect C	Suspect D
Colour					
Odour					
Protein					
pH					
Glucose					

 Who should be arrested and charged with the crime based on urine evidence? **SUSPECT** _____
 Explain: