

Name _____ Partner _____

Blood typing lab

Scenario

Crime investigators were called to the scene of a robbery. Mr. Jones had come home, only to find two people robbing his house. As the criminals rushed to leave the house, one ran into a glass door, cutting his arm and tearing his shirt. The crime investigators removed small drops of blood from the shattered glass. The blood samples from the crime scene, along with the victim's blood, were sent to the forensics lab to be analyzed. The crime investigators reviewed the available evidence and apprehended four suspects. The last remaining piece of evidence needed to solve the crime is to match the blood type found at the scene of the crime to one of the suspects. You, along with your classmates, have been chosen to provide this last piece of evidence and determine which of the suspects the injured burglar is.

Prelab

We are going to use a simple test to determine blood type, performed with a serum that will be added to separate samples of blood.

Complete the following tables. Get them checked off by your instructor prior to beginning the lab.

Reaction to Antibody A Serum	Reaction to Antibody B Serum	Blood type
Agglutination	No agglutination	
No agglutination	Agglutination	
Agglutination	Agglutination	
No agglutination	No agglutination	

Reaction to Anti-Rh Serum	Rh+ / Rh-
Agglutination	
No agglutination	

Materials

- Well plate
- Toothpicks
- Dissecting microscope
- Victim's blood
- Crime scene blood
- Suspect 1's blood
- Suspect 2's blood
- Suspect 3's blood
- Suspect 4's blood
- Anti-A serum
- Anti-B serum
- Anti-Rh serum

Procedure

1. Place a drop of the sample blood in each well to be used on the well plate.
2. Place three drops of the simulated anti-A serum on the blood drop in the anti-A well.
3. Place three drops of the simulated anti-B serum on the blood drop in the anti-B well.
4. Place three drops of the simulated anti-Rh serum on the blood drop in the anti-Rh well.
5. With a toothpick, stir each sample of the anti-serum and blood. MAKE SURE THAT YOU USE A NEW TOOTHPICK FOR EACH SAMPLE so that contamination doesn't occur (and you don't send the wrong suspect to jail).
6. After one minute, observe the slide/well plate under low power magnification and record your observations in the data table below.

Data Table

Blood Source	Anti-A Serum	Anti-B Serum	Anti-Rh Serum	Blood Type
Crime scene				
Victim (Mr. Jones)				
Suspect 1				
Suspect 2				
Suspect 3				
Suspect 4				

Questions

1. As a forensics technician, the courts have asked you to summarize your findings to the jury. Explain what you would say in the space below. (Remember, it is your job to report the facts, not decide who is guilty.)

2. Why is it necessary to type the victim's blood?

3. Look at Suspect #3 and answer the following questions using the information from your prelab chart and your data table from your analysis:

- a. What ABO antigens are present on the suspect's red blood cells? _____
- b. What ABO antibodies are found in the suspect's blood plasma? _____
- c. What is the suspect's blood type? _____
- d. If the suspect needed a blood transfusion, what blood types could s/he receive? _____
- e. What blood types could safely receive this suspect's blood? _____

