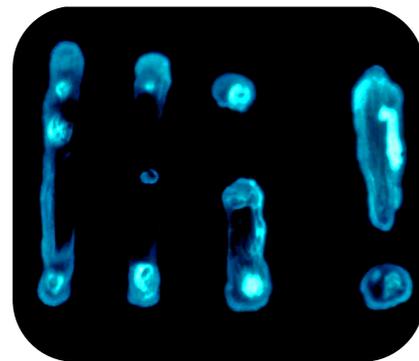


Luminol Blood Detection Activity



Investigation question

Is the substance at the crime scene blood or an unknown substance?

Investigation objective

Use a luminol reaction to perform a presumptive blood test.

Safety

Follow established laboratory safety practices and use appropriate personal protective equipment (PPE) such as gloves, chemical splash goggles, and lab coats or aprons.

Student Materials

- Luminol Blood Detection Investigation Sheet (found below procedure)
- Suspected Bloodstains
- Luminol Solution

Procedure

1. Observe the crime scene and record your observations for each stain.
2. Make a prediction on which stains are blood and which are not based on your observations.
3. Obtain luminol solution from your teacher.
4. Turn off the classroom lights and spray each stain with the luminol solution. When luminol reacts with blood, it produces blue light without heat (a reaction called a chemiluminescent reaction). Luminol does not produce blue light when reacting with other substances. Record your results for each stain in the luminol column.
5. Based on your visual observations and luminol tests, write a conclusion on which stains are and are not blood. Explain your reasoning.
6. Clean and dispose of lab supplies as directed by your teacher.

continued

Luminol Blood Detection Investigation Sheet

	Bloodstain	Bloodstain	Bloodstain	Bloodstain
Observations (color, consistency, stain shape)				
Prediction				
Reaction with Luminol				
Conclusion				

Analysis

1. Did your predictions match your conclusion? Explain why you think they did or did not.
2. Describe what can and cannot be learned from a visual observation of stains that appear to be blood.
3. What type of a reaction is the luminol reaction?
4. Explain why it is valuable for forensic investigators to perform chemical blood tests, such as the luminol test you performed, when analyzing suspected bloodstains.
5. Research questions.
 - a. What causes luminol to glow during a reaction?
 - b. What chemically causes luminol to react with human blood and not with other substances?
 - c. Can investigators be confident in the results of a luminol test, or are there additional factors to consider that may cause a false positive or negative result?