

Forensic Investigation in Chemists' Hands



handout - page 1

1

A suspect claims that on the 15th of October 2018 (the day of the crime), she was under the influence of illicit drugs that somebody gave her without her knowledge. The drug tests of her hair were done on the 4th of March 2019. If hair grows approximately 1 cm/month and the first centimeter by the root comes from the month before the date of the test, give the range of the distance (in centimeters) from the hair root where the drug can be found (eg. between 2 and 3 cm).

The police think that the suspect was taking the drugs for a longer period of time, not only during the crime. How can we check it by using the hair analysis?

2

What is the difference between **fluorescence** and **chemiluminescence**.

3

Write the terms: ***sublimation***, ***resublimation*** in the correct box.

iodine crystals



iodine vapor

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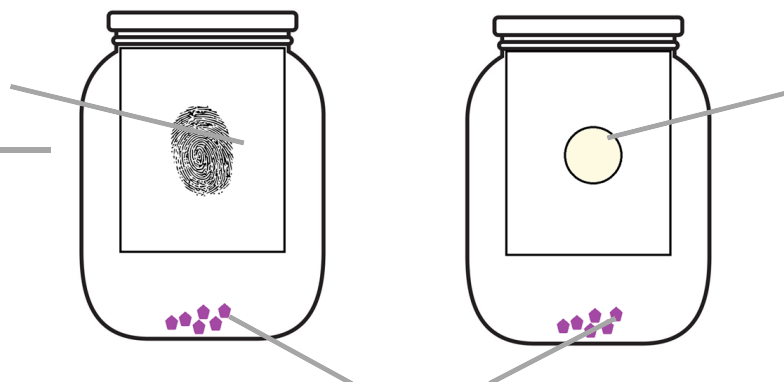
handout - page 2

DETECTIVE YOU



4

Complete the scheme of the fingerprint analysis with iodine. Write the observation and conclusion.



Observation

Conclusion

5

Read the descriptions of chemical elements that can be found in the gunshot residue. Write the correct element symbol in each box.

🔍 This element has 56 protons in the nucleus.

🔍 This element has 5 valence electrons, its mass is higher than the mass of silver but lower than the mass of cesium.

🔍 The cation (2+ charge) of this element reacts with the iodide anion. The product of the reaction is yellow crystals of a salt insoluble in water.