

*Approved by Director: Dr. Guy Vallaro***A. PURPOSE:**

To determine the presence of blood in a sample which gave a positive result with a screening test and negative result(s) for component(s) of human blood.

B. RESPONSIBILITY:

Forensic Science Examiners from the Connecticut State Forensic Science Laboratory who have been trained in the discipline of the Takayama test procedure according to SOP-FB-31 (Training Manual).

C. SAFETY:

Use appropriate measures for the proper handling of the Takayama Reagent according to SOP-GL-2 (Safety Manual).

D. PROCEDURE:

This test will be performed at the discretion of the examiner based on the submitting agency requests, case information and the condition of the evidence.

1. Materials:

- a. Takayama Reagent
- b. Controls: positive (known blood stain) and negative (blank filter paper)
- c. Microscope slides
- d. Cover slips

2. Procedures:

- a. Test a positive and negative control with the following procedure (steps 2.b. – 2.g.).
 - aa. The controls may be run concurrently with the questioned samples.
 - bb. If limited questioned sample is available, run the controls prior to testing the questioned sample. If controls yield the appropriate results then test the questioned sample.
 - cc. If controls do not yield the appropriate results, review the procedure and retest the controls prior to the questioned samples.
- b. Place a portion of the questioned sample on a microscope slide and cover with a cover slip

- D. 2. c. Let 1-2 drops of reagent flow slowly under the cover slip and come in full contact with the

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sample.

- d. Heat the slide gently over a very low flame of an alcohol burner until small bubbles begin to appear under the cover slip. Alternately, the slide may be placed in a 37°C oven for 5-10 minutes.
- e. Allow slide to cool under a hood.
- f. Examine under the microscope at 100-400x, as soon as the slide cools.
- g. If no crystals are observed, re-examine the sample periodically for several hours as weak samples may need a longer time to develop crystals.

3. Results:

- a. *Positive.* The formation of bright red crystals indicates a positive test and the confirmation of blood. Older samples may not dissolve well and crystals may form on the surface of the substrate.
- b. *Negative.* The absence of bright red crystals indicates a negative test and blood is not confirmed.
- c. *Inconclusive.* No distinguishable bright red crystal formation.
- d. Record the results of the controls and samples on the appropriate Quality Record Worksheet.

Note: The reason a result is determined to be inconclusive must also be recorded.

4. Record reagent used on the General Reagent Sheet (FBQR-09).

E. REFERENCES:

1. Takayama, M. " A Method for Identifying Blood by Hemachromogen Crystalization" Kokka Igakkai Zasshi 306 : 15-33 (issue); 463-481 (cumulative),(1912) 15.
2. Metropolitan Police Forensic Science Laboratory. Biology Methods Manual. 1978, pp. 2-90 to 2-91.
3. SOP-GL-2 (Safety Manual).