Document Title: Microcrystal Test for Blood (Takayama Test)
Controlled: Yes, with red stamp present
Controlled By: Quality Manager

Prepared By: _____ Date: _____

Approved By: _____ Date: _____

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 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).