

DEPMEDS LABORATORY PROCEDURES
DEPARTMENT OF CLINICAL SUPPORT SERVICES
U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL
FORT SAM HOUSTON, TEXAS 78234-6137

MCCS-HCM

STANDING OPERATING PROCEDURE

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OCCULT BLOOD IN STOOL

1. INTRODUCTION:

- a. The Hemocult test is a simplified, standardized variation of the guaiac test for occult blood. It contains specially prepared guaiac-impregnated paper and is ready for use without additional preparation.
- b. The test is a rapid, convenient, and virtually odorless method for detecting the presence of fecal occult blood, as an aid to the diagnosis of various gastrointestinal conditions: during routine physical examinations, in newly admitted hospital patients, in newborn infants, and in screening programs for colorectal cancer.

2. PRINCIPLE:

- a. The discovery that gum guaiac was a useful indicator for occult blood is generally credited to Van Deen. The test depends on the oxidation of a phenolic compound, alpha-guaiaconic acid, which yields a blue-colored, highly conjugated quinone structure. Hemoglobin exerts a peroxidase-like activity and facilitates the oxidation of this phenolic compound by hydrogen peroxide.
- b. When a small amount of stool specimen containing occult blood is applied to Hemocult test paper, the hemoglobin comes in contact with the guaiac. Application of the Hemocult Developer (a stabilized hydrogen peroxide solution) creates a guaiac/oxidase-like reaction which turns the test paper blue within 60 seconds if occult blood is present.

3. SPECIMEN:

- a. The recommended specimen is a fresh stool sample without preservatives.
- b. Stool specimens thinly applied to Hemocult slides are acceptable.

4. MATERIALS:

- a. Hemocult guaiac-impregnated paper slides with positive and negative controls.
- b. Specimen applicators.
- c. Hemocult Developer (stabilized hydrogen peroxide).

5. PROCEDURE:

- a. Collect small amount of sample on one end of applicator.
- b. Apply thin smear inside box A.
- c. Reuse applicator to obtain second sample from different part of the stool. Apply thin smear inside box B.
- d. Close cover.
- e. Open flap in back of slide and apply 2 dops of Hemocult Developer to guaiac paper directly over each smear.
- f. Read results within 60 seconds.
- g. Apply ONE DROP ONLY of Hemocult Developer between the positive and negative Performance Monitors.
- h. Read results within 10 seconds.

NOTE: Follow the procedure exactly as outlined above. Always develop the test, read and interpret the results, and make a decision as whether the fecal specimen is positive or negative for occult blood BEFORE you develop the performance monitors. Do not apply Developer to performance monitors before interpreting test results.

6. RESULTS:

- a. Negative for occult blood -- no detectable blue on or at the edge of the patient's smear.
- b. Positive for occult blood -- any trace of blue on or at the edge of the patient's smear.
- c. Any blue originating from the control should be ignored in the reading of the specimen test results.

7. QUALITY CONTROL:

- a. A blue color in the positive control will appear within 10 seconds if the test system is functional.
- b. No blue color will appear in the negative control if the test system is functional.
- c. Neither the intensity nor the shade of the blue from the positive control should be regarded as an indication of what a positive result (blue) should look like in a positive fecal specimen.

8. SAFETY:

- a. Hemocult Developer (hydrogen peroxide) is an irritant. Avoid contact with skin and eyes. Should contact with your eyes occur, the solution should be rinsed out promptly with water.
- b. Hemocult Developer should be protected from heat and the bottle kept tightly capped when not in use. It is flammable and subject to evaporation.
- c. Fecal specimens should always be treated as a possible source of disease.

9. REFERENCES:

- a. Hemocult Product Insert, Smith Kline Distributors, Inc.