

**SUNY DOWNSTATE MEDICAL CENTER**  
UNIVERSITY HOSPITAL OF BROOKLYN  
POLICY AND PROCEDURE

No. LAB23-C

**Subject:** POINT OF CARE – OCCULT  
BLOOD – Hemoccult SENSE  
Slide Method

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**The JC Standards:**  
PC.16.40, PC.16.50, PI.2.20, PC.17.10

**Issued by: Department of Laboratories**

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**PURPOSE OF THE TEST :**

Occult Blood point of care testing is performed in the Emergency Department to obtain timely and accurate results for the invitro measurement of the presence of blood in stool. Testing to be performed with Physician's order.

**PRINCIPLE:**

Gum guaiac is a useful indicator for occult blood. The test depends on the oxidation of a phenolic compound, alpha guaiacetic acid, to a quinone structure, which yields a blue dye by an inter-molecular reaction. Hemoglobin exerts a peroxidase-like activity and facilitates the oxidation of this phenolic compound by hydrogen peroxidase. Since hematin is similar in structure to peroxidase, it probably is the hematin fraction of hemoglobin, which catalyzes the oxidation of guaiac, and its stability is attributable to the protein to which it is attached.

**SLIDE METHOD PRINCIPLE:**

When a small stool specimen containing occult blood is applied to “Hemoccult” test paper, the hemoglobin comes in contact with the guaiac. Application of “Hemoccult” Developer (a stabilized hydrogen peroxide solution) creates a guaiac/peroxidase-like reaction, which turns the test paper blue within 30 seconds if occult blood is present. This reaction requires that the blood cells be hemolyzed. When blood is present, hemolysis is made possible by substances in the stool, primarily water and salts.

**LEVEL OF FUNCTION:** Unit staff in collaboration with Laboratory staff.

**LEVEL OF PERSONNEL:** Physicians, Physicians Assistants, Laboratory Personnel

**REAGENTS:**

1. Hemoccult Slide: Natural guaiac resin impregnated into standardized, high quality filter paper.
2. Hemoccult Developer: Solution containing a stabilized mixture of hydrogen peroxide and denatured alcohol.

**SPECIMEN COLLECTION:**

1. Only a very small stool specimen, thinly applied, is necessary in preparing slide. The slide may be prepared and stored at room temperature.
2. Since bleeding from gastrointestinal lesions may be intermittent, it is recommended that stool smears for testing be collected from three consecutive bowel movements. To increase the probability of detecting occult blood, it is recommended that specimens be taken from two different sections of the stool.
3. Patients with bleeding from other conditions that may show up in stool specimens (e.g. hemorrhoids, menstrual bleeding) are not appropriate test subjects while such bleeding is active.

**PATIENT PREPARATION:**

Whenever practicable, patients should be placed on a meat-free, high residue diet, starting two days before and continuing through the test period. Such a diet helps reduce the number of false positive reactions and at the same time provides roughage to help uncover “silent” lesions, which may bleed only intermittently.

**Diagnostic Diet:**

- No rare meat, turnips or horseradish, aspirin, tonic or vitamin preparation which contains ascorbic acid (Vitamin C) in excess of 250 mg. per day.  
NOTE: Small amounts of chicken or tuna fish are permissible.
- Plenty of vegetables, both raw and cooked, especially lettuce, spinach and corn.
- Plenty of fruit, especially prunes, grapes, plums and apples.
- Moderate amounts of peanuts, popcorn or bran cereal each day.

An alternative procedure is to omit the special diet initially. Then if a patient has one or more positive tests in the initial three-slide series, he should be placed on the special diet and retested for three days.

**PROCEDURE:**

1. Open perforated window in back of Hemocult slide
  - 1.1. Quality Control Area
    - 1.1.1. Apply ONE drop of developer between positive and negative performance monitors
    - 1.1.2. Read result within 30 seconds.  
NEGATIVE: No detectable blue  
POSITIVE: Trace of blue
    - 1.1.3. Record on QC Log Sheet
  - 1.2. Patient Sample Area
    - 1.2.1. Apply TWO drops of developer to each specimen (directly over each smear)
    - 1.2.2. Read results within 60 seconds  
NEGATIVE: No detectable blue anywhere on slide  
POSITIVE: Trace of blue

**LIMITATIONS:**

1. Hemocult cannot be considered conclusive evidence of the presence or absence of gastrointestinal bleeding or pathology.
2. Some oral medications (aspirin, indomethacin, phenylbutazone, corticosteroids, reserpine, etc.) can cause GI irritation and occult bleeding in some patients. The substances should be discontinued two days prior to and during testing.
3. Ascorbic acid (Vitamin C) in large doses has been shown to cause false negative results and should be eliminated before testing.

**REFERENCES:**

1. Gregor, D.H.: Detection of silent colon cancer in routine examination. Cancer 19:330, 1967
2. Gregor, D.H.: Occult blood testing for detection of asymptomatic colon cancer. Cancer 28:131, 1971
3. Ostrow, J. D., Mulvaney, C.A., and Hansell, J.R.: Sensitivity and Reproducibility of Guaiac, Hematest, and "Hemocult" Tests for Fecal occult Blood (Abstr.) Ann. Int. Med. 76:860, 1972
4. Smith Kline Diagnostics, Inc. – product instruction for Hemocult Slide test.

Date Reviewed	Revision Required		Responsible Staff Name and Title
	Yes	No	
	Yes	No	