



## Folin & Wu's Alkaline Copper Solution

R006

### Intended use

Folin & Wu's Alkaline Copper Solution is used for determination of blood sugar by Folin Wu's method.

### Composition\*\*

#### Ingredients

Sodium carbonate	40.0gm
Tartaric acid	7.50gm
Copper sulphate	4.50gm
Distilled water	1000.0ml
Final pH ( at 25°C)	9.9±0.5

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

#### a) Deproteinisation:

- 1) Take 1 ml blood in a test tube.
- 2) Add 7 ml distilled water and 1 ml of 0.6 N H<sub>2</sub>SO<sub>4</sub> and mix well. Allow it to react for 5-10 minutes.
- 3) Precipitate the proteins by adding 1 ml of 10% Sodium tungstate. Mix thoroughly and keep at room temperature for 10 minutes.
- 4) Centrifuge or filter through Whatman No. 1 filter paper.

#### b) Reduction and Colour Development:

- 1) Pipette out 2 ml of the above filtrate into a Folin-Wu tube labelled "Test".
- 2) Add 2 ml of standard glucose (100% in saturated benzoic acid) in to another Folin-Wu tube named "S".
- 3) Add 2.0ml Folin and WU's Alkaline Copper solution (R006) in each tube. Mix and keep in boiling water bath for 8 minutes.
- 4) Cool under running tap water.
- 5) Add 2.0 ml of Folin and WU's phosphate molybdate solution (R007) and dilute with distilled water to 25 ml mark. Mix well and keep for 5 minutes.
- 6) Read the colour of standards and test at 420 nm using distilled water as blank.  
Blood glucose (mg/dl) = OD of T/OD of S x 100.

### Principle And Interpretation

Reducing sugars under alkaline conditions reduce the cupric ions of the copper reagent to cuprous ions. Cuprous oxides reacts with phosphomolybdic acid to form molybdenum blue. Intensity of molybdenum blue is directly proportional to the concentration of reducing sugars present. It is measured at 625 nm and compared with a known standard.

### Type of specimen

Clinical samples: Blood

### Specimen Collection and Handling

1. For clinical samples follow appropriate techniques for handling specimens as per established guidelines( 1,2).

### Warning and Precautions

In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/ eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

## Performance and Evaluation

Performance of the product is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

### Quality Control

#### Appearance

Sky blue coloured solution.

#### Clarity

Clear solution with no insoluble particles

#### Reaction

Reaction of the solution at 25°C.

#### pH

9.40-10.40

#### Test

Estimation of blood sugar is carried out by Folin and WU's method .

#### Results

The normal range for

1) Blood sugar (fasting) : 80-120 mg/dl.

2) Blood sugar P.P (2hours after lunch) : Up to 140 mg/dl

## Storage and Shelf Life

Store between 10-30°C in tightly closed container and away from bright light. Use before expiry date on label. On opening, product should be properly stored in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).

## Reference

6. Lepage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.

7. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.

Text book of Medical Laboratory Technology; Praful B.Godkar

Revision : 01 / 2015



### Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.