



# **Crystal Violet Lactose Broth**

# **Intended Use:**

Recommended for detection of coliforms in water filtration control works.

### **Composition\*\***

Ingredients	Gms / Litre
Peptone	5.000
Lactose	5.000
Dipotassium hydrogen phosphate	5.000
Potassium dihydrogen phosphate	1.000
Crystal violet	0.00143
Final pH ( at 25°C)	7.4±0.2

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

## Directions

Suspend 16 grams in 1000 ml purified /distilled water. Distribute in 10 ml quantities in tubes with inverted Durhams tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. If the inoculum is more than 1 ml double or multiple strength media must be used.

# **Principle And Interpretation**

The extent to which total coliforms are present in the source water can indicate the general quality of that water and the likelihood that the water is faecally contaminated. Total coliforms are currently controlled in drinking water regulations (i.e. Total Coliform Rule) because their presence above the standard indicates inefficacy in treatment or in the distribution system. Environmental Protection Agency (EPA) requires all public water systems to monitor for total coliforms in distribution systems. If coliforms are found, then the public water system must further analyze coliform-positive sample for specific types of coliforms (i.e., faecal coliforms or *E. coli*). EPA is increasing protection from pathogens in surface water systems as part of the Interim Enhanced Surface Water Treatment Rule. Crystal Violet Lactose Broth is used for the detection of coliforms in such water filtration control works.

The media contains proteose peptone and peptone as sources of carbon, nitrogen, vitamins and minerals. Dipotassium hydrogen phosphate and Potassium dihydrogen phosphate provide buffering to the medium. Lactose is the carbon and energy source. Crystal violet inhibits most of the gram positive organisms.

**Type of specimen** 

Water samples

# **Specimen Collection and Handling:**

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(1) After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions :

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 specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations :

1. This medium is general purpose medium and may not support the growth of fastidious organisms.

# 2GTHQTOCPEG CPF 'XCNWCVKQP

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

**M831** 

## **Quality Control**

#### Appearance

Light yellow to light tan homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Light purple coloured, clear solution in tubes

#### Reaction

Reaction of 1.6% w/v aqueous solution at 25°C. pH : 7.4±0.2

#### pН

7.20-7.60

#### **Cultural Response**

Cultural characteristics observed after an incubation at 35-37°C for 40-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of medium
Escherichia coli ATCC 25922 (00013*)	50-100	good-luxuriant	purple
Staphylococcus aureus ATCC 25923 (00034*)	50-100	none-poor	light yellow
Staphylococcus epidermidis ATCC 12228 (00036*)	50-100	fair-good	purple/very slightly yellow
Streptococcus pyogenes ATCC 19615	>=10 <sup>4</sup>	inhibited	

Key: \*Corresponding WDCM numbers.

#### **Storage and Shelf Life**

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use.

Product performance is best if used within stated expiry period.

# 'LVSRVDO

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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

## 5 H I H U H Q F H

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.

2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2<sup>nd</sup> Edition.

 Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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#### Disclaimer :

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