



## Glucose Yeast Extract BC Agar Medium

M2102

### Intended use

Recommended for cultivation and enumeration of *Bacillus coagulans* from food samples.

### Composition\*\*

Ingredients	Gms / Litre
Peptone	5.000
Yeast extract	5.000
Glucose (Dextrose)	5.000
Di-Potassium hydrogen phosphate	0.500
Potassium dihydrogen phosphate	0.500
Magnesium sulphate	0.300
Trace mineral solution	1.0ml
Agar	15.00
Final pH ( at 25°C)	6.3±0.2

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

Trace mineral solution	mg/ml
Sodium chloride	10.00
Iron (II) sulfate, 7H <sub>2</sub> O	18.00
Manganese (II) sulfate, H <sub>2</sub> O	16.00
Zinc sulfate, 7H <sub>2</sub> O	1.600
Copper (II) sulfate, 5H <sub>2</sub> O	1.600
Cobalt (II) sulfate, 7H <sub>2</sub> O	1.600

### Directions

Suspend 31.30 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

*Bacillus coagulans* is a lactic acid-forming bacterial species. Spore forming *B. coagulans* strains are used in some countries as probiotics for patients on antibiotics (4). There are number of organisms from different groups like *Lactobacillus*, *Bifidobacterium*, *Enterococcus*, *Bacillus*, *Streptococcus* used as probiotics. Most of these lose their viability during harsh manufacturing processes and storage of food. Hence these require encapsulation via special processes. The unique property of *B. coagulans* of forming spores helps them to remain dormant stage.

As recommended by APHA, in routine diagnosis for spoilage in canned foods, microbiological cultural procedures involve the use of primary recovery media and subculture media to identify spoilage bacteria and study its growth characteristics. Recovery media for aerobes generally include DTA (Dextrose Tryptone Agar) (M092) or DTB (Dextrose Tryptone Bromocresol Broth) (M122). Use of Cooked Meat Medium (M149) is recommended for recovery of anaerobic organisms. The medium contains peptone and yeast extract provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and essential growth nutrients. variety of salts like sulphates, phosphates to support the growth of *Bacillus*. Glucose (Dextrose) is the source of fermentable carbohydrate. Manganese is known to influence and enhance sporulation in *Bacillus* species.

### Type of specimen

Food samples

### Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (3). 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations :

1. Some strains may show poor growth due to nutritional variations.

### Performance and Evaluation

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

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel forms in Petri plates

#### Reaction

Reaction of 3.13% w/v aqueous solution at 25°C. pH : 6.3±0.2

#### pH

6.10-6.50

#### Cultural response

Cultural characteristics observed after an incubation at 40±2°C for 48 hours

Organism	Inoculum (CFU)	Growth	Recovery
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<i>Bacillus coagulans</i> ATCC 7050 (00002*)	50-100	luxuriant (with sporulation)	≥50%
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Key : (\*) corresponding WDCM numbers

### Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°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.

### 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (1,2).

### Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. 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.
3. Salfinger Y., and Tortorello M.L. , 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Sanders, M. E.; Morelli, L.; Tompkins, T. A. (2003). "Sporeformers as Human Probiotics: *Bacillus*, *Sporolactobacillus*, and *Brevibacillus*". Comprehensive Reviews in Food Science and Food Safety. 2 (3): 101–110.

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