

## **TECHNICAL DATA SHEET**

### **Glucose Agar (Dextrose Agar)**

#### **Principle**

The glucose agar consists of tryptone, yeast extract, glucose, sodium chloride, yeast extract, dipotassium phosphate, bromothymol blue and agar. Tryptone provide nitrogen and amino acids. Yeast extract provide essential nutrients for growth: nitrogen, vitamins, minerals and amino acids; Glucose is the fermentable carbohydrate providing carbon and energy; Sodium chloride maintains the osmotic balance. Dipotassium phosphate maintain buffer. Bromothymol blue is a pH indicator. The glucose fermenting microorganisms produce acid turns media color from blue to yellow. While non-fermenting appears as blue color or colorless.

**Use:** For differentiation of Enterobacteriaceae in urine, water and food samples.

#### **Contents\***

| <b>Ingredients</b>           | <b>Gram/Litre</b> |
|------------------------------|-------------------|
| <b>Tryptone</b>              | <b>2.000</b>      |
| <b>Yeast Extract</b>         | <b>1.000</b>      |
| <b>Glucose</b>               | <b>10.000</b>     |
| <b>Sodium Chloride</b>       | <b>5.000</b>      |
| <b>Dipotassium Phosphate</b> | <b>0.300</b>      |
| <b>Bromothymol Blue</b>      | <b>0.080</b>      |
| <b>Agar</b>                  | <b>2.500</b>      |
| <b>pH at 25°C</b>            | <b>7.1 ±0.2</b>   |

**\* Formula adjusted for optimum performance and parameters**

**Directions:** Dissolve 20.88 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121 °C) for 15 min, cool it to 42-45 °C and distribute aseptically in desired. Allow to cool at room temperature and inoculate test sample aseptically.

#### **Specimens' types analyzed**

Food and dairy samples and water samples, pharmaceutical samples, clinical and non-clinical samples etc.

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## Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

## Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

## Quality Control

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| Appearance                        | Light beige colored free flowing, homogeneous powder |
| Reaction of 2.0% solution         | 7.1 $\pm$ 0.2 at 25 °C                               |
| pH                                | 6.90- 7.30                                           |
| Gelling                           | Firm comparable with 0.25% agar gel                  |
| Color and clarity of ready medium | Blue colored, clear opalescent gel                   |
| Growth Promotion properties       | Best at $\leq$ 100 CFU at 32-37 °C for 18-72 h       |
| Indicative properties             | Optimum at $\leq$ 100 CFU at 32-37 °C for 18-48 h    |
| Negative control                  | Performed using sterile distilled water              |

**Different Microbial Response:** Cultural characteristics observed after incubation at 35 $\pm$ 2°C for 18-24 hours.

| Organism                      | ATCC  | Inoculum (CFU) | Growth    | Acid production                  |
|-------------------------------|-------|----------------|-----------|----------------------------------|
| <i>Escherichia coli</i>       | 8739  | 50-100         | Luxuriant | Yellow color (Positive reaction) |
| <i>Escherichia coli</i>       | 25922 | 50-100         | Luxuriant | Yellow color (Positive reaction) |
| <i>Klebsiella aerogenes</i>   | 13048 | 50-100         | Luxuriant | Yellow color (Positive reaction) |
| <i>Salmonella typhimurium</i> | 14028 | 50-100         | Luxuriant | Yellow color (Positive reaction) |

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**Storage and Shelf Life:** The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label.

**Note:** Sterilize media immediately after reconstitution.

**Disposal:** To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

## Reference

1. American Public Health Association, (1978) Standard Methods for the Examination of Dairy Products, 14<sup>th</sup> Ed., Washington D.C.
2. Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.
3. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and Wastewater, 23<sup>rd</sup> Ed., APHA, Washington, D.C.
4. Difco Manual (1998). 11<sup>th</sup> Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.

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