

CM 20217 – BACILLUS DIFFERENTIATION AGAR

INTENDED USE

For differentiation of *Bacillus cereus* and *Bacillus subtilis* based on mannitol fermentation.

PRODUCT SUMMARY AND EXPLANATION

Bacillus is Grampositive, rod-shaped bacteria; can be obligate aerobes or facultative anaerobes. Under stressful environmental conditions they produce oval endospores, that can be dormant for extended periods *Bacillus cereus* causes food-borne illness and *Bacillus subtilis* is involved in food spoilage like ropiness in bread and other related foods. *Bacillus* Differentiation Agar is recommended for differentiation between *Bacillus cereus* and *Bacillus subtilis* based on mannitol fermentation.

COMPOSITION

| Ingredients | Gms / Ltr |
|---------------------------------|-----------|
| Yeast autolysate | 0.200 |
| Mannitol | 5.000 |
| Monohydrogen ammonium phosphate | 1.000 |
| Potassium chloride | 0.200 |
| Magnesium sulphate | 0.200 |
| Bromo cresol purple | 0.0075 |
| Agar | 15.400 |

PRINCIPLE

Yeast autolysate provide necessary nitrogenous source for growth of *Bacillus*. Magnesium sulphate and Potassium chloride supports sporulation. Ammonium phosphate maintains buffering action. Bromocresol purple act as a pH indicator to detect mannitol fermentation.

INSTRUCTION FOR USE

- Dissolve 22.0grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder : Light yellow to light green homogeneous free flowing powder.
- Appearance of prepared medium : Light purple coloured clear to slightly opalescent gel forms in Petri plates.
- pH (at 25°C) : 7.2±0.2

INTERPRETATION

Cultural characteristics observed after incubation.



| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Recovery | Colour | Incubation Temperature | Incubation Period |
|-------------------------------------|-------|-------------------|-----------|----------|------------|------------------------|-------------------|
| Bacillus cereus | 10876 | 50-100 | Luxuriant | >=70% | Colourless | 35-37°C | 18-24 Hours |
| Bacillus subtilis subsp. spizizenii | 6633 | 50-100 | Luxuriant | >=70% | Yellow | 35-37°C | 18-24 Hours |

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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. Madigan M; Martinko J (editors). (2005). Brock Biology of Microorganisms (11th ed.). Prentice Hall.
4. Turnbull PCB (1996). Bacillus. In: Barron's Medical Microbiology (Baron S et al., eds.) (4th ed.). Univ of Texas Medical Branch.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For LabUse Only

