



Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Carbohydrate Consumption Broth Base

Product Code: DM 2264

Application: - Carbohydrate Consumption Broth Base is recommended for the cultivation and differentiation of *Listeria* species on the basis of sugar fermentation.

Composition**

Ingredients	Gms / Litre
Proteose peptone	10.000
Sodium chloride	5.000
Meat extract B #	1.000
Bromocresol purple	0.100
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

- Equivalent to Beef extract

Principle & Interpretation

Carbohydrate Consumption Broth is used for the cultivation and differentiation of *Listeria* species and formulated as per Atlas (1). It is also recommended by FDA (2) and ISO (3) with a slight difference in the concentration of bromocresol purple. Differentiation is based on fermentation of glucose, xylose, rhamnose, ribose, a-methyl-D-mannoside and mannitol.

Proteose peptone and meat extract B supply carbon and nitrogen compounds including essential amino acids, vitamins and trace ingredients for bacterial metabolism in the medium. Bromocresol purple is the pH indicator, which indicates acid production by turning yellow in colour.

Carbohydrate utilization test: Inoculate each kind of carbohydrate fermentation broth with one loopful of inoculum. Incubate for 7 days at 37°C. Observe daily for acid induced colour change and gas formation. Sometimes weak positive reactions may occur after 48 hours of incubation (2).

Methodology

Suspend 16.1 grams of dehydrated media powder in 990 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely. Dispense into tubes containing inverted Durhams tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Aseptically add 10 ml separately sterilized carbohydrate solution to give a final concentration of 0.5%. Mix well.

Quality Control

Appearance

Light yellow to beige homogeneous free flowing powder

Colour and Clarity

Purple coloured, clear solution without any precipitate

Reaction

Reaction of 1.61% w/v aqueous solution at 25°C. pH : 6.8±0.2

Ph Range

6.60-7.00

Cultural Response

DM2264: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.



Organism	Inoculum (CFU)	Growth	w/o carbohydrate Acid	w/o carbohydrate gas	w/ rhamnose (acid)	w/ rhamnose (gas)
<i>Escherichia coli</i> ATCC25922	50-100	good-luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	positive reaction
<i>Listeria monocytogenes</i> ATCC 19111	50-100	good-luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	negative reaction
<i>Listeria monocytogenes</i> ATCC 19112	50-100	good-luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	negative reaction
<i>Listeria monocytogenes</i> ATCC 19117	50-100	good-luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	negative reaction
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant	negative reaction, no colour change	negative reaction	negative reaction, yellow colour	negative reaction
<i>Listeria monocytogenes</i> ATCC 19118	50-100	good-luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	negative reaction

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Atlas R. M., 2004, Handbook of Microbiological Media, 3rd Edition, CRC Press, Washington D. C.
2. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.
3. International Organization for Standardization (ISO), 1993, Draft ISO/DIS 10560.

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