Technical Information

Carbon Utilization Agar

Product Code: DM 1363

Application: - The use of Carbon Utilization Agar is for characterization of *Streptomyces* on the basis of carbon utilization studies.

Composition**

Ingredients	Gms / Litre
Ammonium sulphate	2.640
Monopotassium phosphate	2.380
Dipotassium phosphate.3H2O	5.650
Magnesium sulphate.7H2O	1.000
Copper sulphate.5H2O	0.0064
Ferrous sulphate.7H2O	0.0011
Manganese chloride.7H2O	0.0079
Zinc sulphate.7H2O	0.0015
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Streptomyces are a group of gram-positive bacteria belonging to *Actinobacteria* found in soil and decaying vegetation.

Carbon Utilization Agar is developed as per International Streptomyces Project [1, 2] for the cultivation and differentiation of *Streptomyces purpureus* and other *Streptomyces* species based on carbohydrate utilization. The different type of salts provides the electrolytes and minerals essential for the in vitro growth of *Streptomyces* species. The carbohydrates used for the studies are glucose, sucrose, xylose, arabinose, inositol, mannitol, fructose, rhamnose, raffinose or cellulose.

Methodology

Suspend 24.83 of grams of dehydrated medium in 900 ml distilled water. Shake it well & heat to boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add 100 ml of 10% filter sterilized desired carbohydrate solution. Mix well and dispense as desired.

Quality Control

Physical Appearance

Off-white to light yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Colourless, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 2.48%w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range 6.80-7.20

Cultural Response/ characteristics

DM 1363: Cultural characteristics observed after an incubation at 30-32°C for 48-72 hours with added 100ml/litre of 10% filter sterilized carbohydrate.

Organism	Growth
Streptomyces albus subspalbus ATCC 3006	good-luxuriant
Streptomyces lavendulae ATCC 8664	good-luxuriant
Streptomyces peucetius ATCC 29050	good-luxuriant
Streptomyces purpureus ATCC 27787	good-luxuriant

Storage and Shelf Life

Dried Media : Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media : 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Shirling E. B. and Gottlieb D., 1966, Methods for Characterization of Streptomyces species, Int. J. Syst. Bacteriol., 16:313.
2. Atlas R. M., 1993, Handbook of Microbiological Media, Parks L.C. (Ed .), CRC Press, Inc.

Disclaimer :

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