PHENOL RED DEXTROSE BROTH TM 537

For determination of the ability of microorganisms to ferment dextrose

Composition

Ingredients	Gms/Ltr.
Proteose peptone	10.00
Dextrose	5.00
Sodium chloride	5.00
Beef extract	1.00
Phenol red	0.018

* Dehydrated powder, hygroscopic in nature, store in a dry place in tightly- sealed containers 25°C and protected from direct Sunlight.

Instructions for Use

Dissolve 21gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Dispense into test tubes containing inverted Durham tubes for detection of gas formation. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool at room temperature prior to use.

Appearance: Red colour, clear solution without any precipitate
pH (at 25°C): 7.4 ± 0.2

Principle

PHENOL RED DEXTROSE BROTH used for the determination of fermentation reactions in the differentiation of microorganisms. Proteose peptone provides nutrients and is low in fermentable carbohydrate which allows for abundant growth of a wide variety of fastidious microorganisms. Dextrose is a source of fermentable carbohydrate as energy and carbon. The pH indicator, phenol red, is used to detect acid production. Most of the end products of carbohydrate fermentation are organic acids which, in the presence of Phenol red, produce a color change in the medium from red to yellow. Incubate tubes with loosened caps at for 18 - 48 hours at 35 ± 2^{0}C either in an aerobic or anaerobic atmosphere depending on the organism being evaluated. When the organism is able to use the carbohydrate, a gas by-product may be produced. If it is, an air bubble will be trapped inside the Durham tube. If the organism is unable to utilize the carbohydrate, gas will not be produced, and no air bubble will be formed and observe for colour change. Additional tubes of Phenol Red Broth Base without carbohydrates should be inoculated at the same time to avoid false positive results caused by fermentable material present in one or more of the components.

Interpretation

Cultural characteristics observed after inoculating (10^3CFU/ml), on incubation at 35 ± 2°C for 18 - 48 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Appearance of colony	Acid/ Gas
Escherichia coli	25922	10^3	Luxuriant	A/G
Enterococcus faecalis	33186	10^3	Luxuriant	A
Pseudomonas aeruginosa	10145	10^3	Luxuriant	K

KEY: A = growth with acid (yellow color)
K = growth with alkaline reaction (red color)
G = gas formation

References

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