

PHENOL RED XYLOSE BROTH
TM 541

For determination of the ability of microorganisms to ferment D - xylose

Composition

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

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

Instructions for Use

Dissolve 21gms in 1000ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Dispense into test tubes containing inverted Durham's tubes and sterilize at 15 psi (121°C) for 15 minutes. Cool to room temperature prior inoculation.

Appearance: Red colour, clear solution

pH (at 25°C): 7.4 ± 0.2

Principle

PHENOL RED XYLOSE BROTH is used for determination & fermentation of xylose reactions. Proteose peptone and Beef extract provides nitrogen, carbon and other essential sources for the growth of organisms. Xylose is added as the fermentable carbohydrate. Xylose is a sugar that some bacteria can use because of an enzyme that begins the breakdown of this compound. Sodium chloride maintains osmotic balance. Phenol red is a pH indicator, which turns to yellow while having acidic pH. After incubation media colour changes to yellow which is a indicator of fermentation reaction, with or without gas formation (Durham's tubes). The member of Enterobacteriaceae grows well in this medium. Bacteria are identified based largely on what organic compounds they can break down. The range of compounds used depends on the collection of enzymes a species of bacteria can make. Phenol red xylose broth is thus used to determine whether the microbe can use the sugar xylose for carbon and energy.

Interpretation

Cultural characteristics observed after inoculating (10³CFU/ml), on incubation at 35 ± 2°C for 18 - 24 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Xylose Acid / Gas Production
<i>Escherichia coli</i>	25922	10 ³	Luxuriant	+ / +, yellow colour
<i>Enterobacter aerogenes</i>	13048	10 ³	Luxuriant	+ / +, yellow colour
<i>Proteus vulgaris</i>	6380	10 ³	Luxuriant	+ / weak reaction, yellow colour
<i>Salmonella typhi</i>	6539	10 ³	Luxuriant	+ / -, yellow colour
<i>Shigella flexneri</i>	12022	10 ³	Luxuriant	+ / -

References

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