



PRODUCT DATA SHEET

HUGH LEIFSON MEDIUM

TM 125

For detecting aerobic and anaerobic breakdown of glucose

Composition

Ingredients	Gms/Ltr.
Glucose	10.0
Sodium chloride	5.00
Agar	2.00
Peptic digest of animal tissue	2.00
Dipotassium phosphate	0.30
Bromothymol blue	0.05

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

Instructions for Use

Dissolve 19.35gms in 1000ml of distilled water. Gently heat to dissolve the medium completely. Sterilize at 121°C for 15 minutes. Cool to 40- 45°C and dispense into sterile tubes.

Appearance: Green blue colour, clear to opalescent gel

pH (at 25°C): 6.8 ± 0.2

Principle

HUGH LEIFSON MEDIUM is used for differentiation detecting aerobic and anaerobic breakdown of glucose. "Hugh and Leifson" formulated this medium. Hugh Leifson Medium is used to distinguish between the anaerobic and aerobic breakdown of glucose. The medium contains a high concentration of added carbohydrates relative to the Peptic digest of animal tissue concentration to avoid the utilization of peptone by an aerobic organism and the resultant production of an alkaline reaction which would neutralize slight acidity produced by an oxidative organism. Sodium chloride is used in high concentration which makes media very selective. The Agar content permits the property of semi solid media, which helps in determination of motility and aids in the even distribution of any acid produced at the surface of the medium. Growth in the oxidation-fermentation medium of Hugh and Leifson with two tubes, one open (aerobic) and another closed (anaerobic), is a common test to determine this character. Oxidative organisms produce acid in an unsealed tube with little or no growth and no acid in a sealed tube. Fermentative organisms produce acid in both sealed and unsealed tubes.

Interpretation

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

Microorganisms	ATCC	Aerobic	Anaerobic
<i>Escherichia coli</i>	25922	Acid and gas production, positive reaction	Acid and gas production, positive reaction

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<i>Pseudomonas aeruginosa</i>	27853	Acid production, negative reaction, no colour change	Acid production, positive reaction, yellow colour
<i>Shigella sonnei</i>	25931	Acid and gas production, positive reaction	Acid and gas production, positive reaction

References

1. American Type Culture Collection, Manassas, Va. U.S.A.
2. Hugh, R., and E. Leifson. The taxonomic significance of fermentative versus oxidative metabolism of carbohydrates by various gram negative bacteria. J. Bacteriol. 66:24-26. (1953)..
3. MacFaddin, J.F. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. I. Williams & Wilkens, Baltimore. (1985).