Reference: 651810ZA **Technical Data Sheet**

Product: **O/F Glucose Medium (Hugh y Leifson)**

Specification

Fluid medium used for determining the oxidative and/or fermentative metabolism of Gram negative bacilli (Enterobacteriaceae).

Presentation

	Packaging Details	Shelf Life	Storage
20 Tubes Tube 16 x 113 mm with: 10 ± 0.3 ml	1 box with 20 tubes, 16x113 mm glass tubes, ink labelled and metal-Non injectable cap.	12 months	8-25 ºC

Composition

Composition (g/l):

Casein peptone	2.00
Sodium chloride	5.00
D(+) Glucose	10.0
Dipotassium phosphate	0.20
Bromothymol Blue	0.08
Agar	2.50

Description /Technique

Description

Using this medium Hugh and Leifson were able to differentiate Gram negative bacteria into three categories: fermentative, oxidative and inactive.

Technique

The inoculation technique is stab inoculation. One tube is covered with vaseline® layer to induce an anaerobic environment that forces the strain to carry out fermentation.
Fermentative organisms produce a large amount of acid in both the tubes, and this is indicated by the yellow colouration of the Bromothymol Blue indicator. Bacteria that utilise an oxidative metabolic pathway carry out this reaction only in the tube without the vaseline ®. Inactive strains do not use sugars and therefore do not induce any change in either tube.
In some instances a slight blue colouration, probably due to alkalinization by peptone degradation, can occur.

Note: pH decrease may appear over time without affecting its performance.

Quality control

Physical/Chemical control

Color : Green pH: 7.1 ± 0.2 at 25ºC

Microbiological control

Inoculate by stabbing with and without vaseline

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 35 ± 2 ºC. Reading at 24 hours.

Microbiological control according to ISO 11133:2014/A1:2018; A2:2020.

Microorganism	Growth
Ps. aeruginosa ATCC® 27853, WDCM 00025	Good growth- O/F: Pos./Neg.
Escherichia coli ATCC® 25922, WDCM 00013	Good growth- O/F: Pos./Pos. Yellow medium
Salmonella typhimurium ATCC® 14028, WDCM 00031	Good growth- O/F: Pos./Pos. Yellow medium
Salmonella enterica ATCC® 13076, WDCM 00030	Good growth- O/F: Pos./Pos. Yellow medium
Ps. fluorescens ATCC®13525, WDCM 00115	Good growth- O/F: Pos./Neg.

Sterility Control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

Bibliography

· ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
· COWAN, S.T. (1974) Cowan and Steel's manual for the identification of medical bacteria. 2nd ed. Cambridge University Press. UK.
· DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods. 4th ed. APHA. Washington. DC. USA.
· FORBES, B.A., D.F SAHM & A.S. WEISSFELD (Eds.) (1998) Bailey & Scott's Diagnostic Microbiology. 10th ed. Mosby. St Louis. MO. USA.
· HORWITZ, W. (2000) Official Methods of Analysis of the AOAC International 17th ed. Gaithersburg. MD. USA.
· HUGH, R. & E. LEIFSON (1953) The taxonomic significance of fermentative vs. Oxidative metabolism of carbohydrates by various Gram negative bacteria. J. Bact 66:24.
· ISENBERG, H.D. (1992) Clinical Microbiology Procedures Handbook. ASM Press. Washington. DC. USA.
· ISENBERG, H.D. (1998) Essential Procedures for Clinical Microbiology. ASM Press. Washington. DC. USA.
· MURRAY, P.R., E.J. BARON, J.H. JORGENSEN, M.A. PFALLER & R.H. YOLKEN (Eds.) (2003) Manual of Clinical Microbiology. 8th ed. ASM Press. Washington. DC. USA.
· MacFADDIN, J.F. (1985) Media for Isolation-cultivation-identification-maintenance of Medical Bacteria. Vol. I. Williams & Wilkins. Baltimore. MD. USA.
· US FDA (Food and Drug Adminstrations) (1998) Bacteriological Analytical Manual. 8th ed. AOAC International. Gaithersburg. MD. USA.
· WINN, W., S. ALLEN, W. JANDA, E. KONEMAN, G. PROCOP, G. WOODS & P. SCHRECKENBERER (2006) Koneman's Color Atlas and Textbook of Diagnostic Microbiology. 6th ed. Lippincott, Williams & Wilkins. Philadelphia. PA. USA.
. ISO 11133:2014/ Adm 1:2018/ Adm 2:2020/ Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.