OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

MUG EC Broth

Principle

EC broth is used for detection of coliforms during bacteriological examination of water, milk and food samples. Its modification of Media was described by Hajna and Perry (1943). Media composed of tryptone, lactose, bile salt, dipotassium phosphate, potassium dihydrogen phosphate and sodium chloride and fluorogenic agent (4-Methylumbelliferyl ß-D-Glucuronide (MUG). Tryptone provide nitrogen and amino acids and trace nutrients required for the growth of bacteria. Lactose is fermentable carbohydrate, allow only lactose fermenting bacteria to grow. Bile salts inhibit gram-positive bacteria including fecal streptococci. Dipotassium phosphate and potassium dihydrogen phosphate are buffering agent resist change in pH of medium. Gas production in a fermentation tube within 24 hour or less is presumptive evidence of the presence of coliform bacteria. MUG is hydrolyzed by the enzyme β−glucuronidase possessed by E. coli to yield a fluorescent end product 4-Methylumbelliferone.

Use: For detection of Escherichia coli in water and food by fluorogenic method.

Contents*

Ingredients	Gram/Litre
Tryptone	20.000
Lactose	5.000
Bile Salts	1.500
Dipotassium Phosphate	4.000
Potassium Dihydrogen Phosphate	1.500
Sodium Chloride	5.000
4-Methylumbelliferyl ß-D-Glucuronide	0.050
(MUG) pH at 25˚C	6.9 ±0.2

*** Formula adjusted for optimum performance and parameters**

Directions: Dissolve 37.05 grams in 1000 ml distilled water. Boil to dissolve the medium completely and distribute in test tube containing inverted Durham's tube. Sterilize by autoclaving at 15 lbs pressure (121 °C) for 12 min, cool it to 42-45 °C and inoculate test sample aseptically.

Specimens types analyzed
Water and food samples, clinical and non-clinical samples etc.

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Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within

Quality Control

Appearance	**Beige colored free flowing, homogeneous powder**
Reaction of 3.7% solution	**6.9 ±0.2 at 25 ˚C**
pH	**6.70- 7.10**
Color and clarity of ready medium	**Light amber colored opalescent solution**
Growth Promotion properties	**Best at ≤ 100 CFU at 32-37 ºC for 18-72 h**
Indicative properties	**Optimum at ≤ 100 CFU at 32-37 ºC for 18-48 h**
Negative control	**Performed using sterile distilled water**

Different Microbial Response: Cultural characteristics observed after incubation at 33-37°C for 18-24 hours.

Organism	ATCC	Inoculum (CFU)	Growth	Gas production	Fluorescence under UV at 366 nm
Escherichia coli	**8739**	**50-100**	**Luxuriant**	**Positive**	**Positive**
Escherichia coli	**25922**	**50-100**	**Luxuriant**	**Positive**	**Positive**
Klebsiella aerogenes	**13048**	**50-100**	**Luxuriant**	**Negative**	**Negative**
Salmonella typhimurium	**14028**	**50-100**	**Good**	**Negative**	**Negative**
Shigella flexneri	**9199**	**50-100**	**Good**	**Negative**	**Negative**
Staphylococcus aureus	**25923**	**50-100**	**Inhibited**	**--**	**--**

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Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. **Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.**
2. **Hajna A. A. and Perry C. A., (1943), American Journal of Public Health, 33:550.**
3. **Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and Wastewater, 23rd Ed., APHA, Washington, D.C.**

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