

TM 315 – EIJKMAN LACTOSE BROTH

INTENDED USE

For differentiating *E. coli* from other coliforms based on their ability to liberate gas from lactose.

PRODUCT SUMMARY AND EXPLANATION

Coliform organism is a term used to designate the lactose-fermenting Enterobacteria such as *Escherichia coli* and *Enterobacter*. *Enterobacteriaceae* forms a large group of gram-negative bacteria that inhabit intestinal tract of warm-blooded animals. Therefore, they constitute the major microbial flora of human faeces. Since coliforms are readily isolated and identified, they are used as indicator organisms to check faecal contamination of food, water and other samples. *E. coli* is one of the common organisms involved in gram-negative sepsis and endotoxin-induced shock.

Eijkman described a method for selective isolation of *E. coli* from faeces of warm-blooded and cold-blooded animals. This method had limitations due to the inability to obtain growth after subculturing from positive tubes incubated at 46°C, as acidity and high temperature resulted in death of the culture within 24-48 hours. Perry and Hajna modified Eijkman's original method by decreasing carbohydrate content and adding a phosphate buffer enabling to subculture *E. coli* after incubation at 46°C for 96 hours or longer where pH was 5.6 unlike 4.5 of Eijkman Medium. Perry modified Eijkman Medium using lactose for isolation of *E. coli*. This medium can also be used for bacteriological examination in water filtration control work.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	15.000
Lactose	3.000
Dipotassium hydrogen phosphate	4.000
Potassium dihydrogen phosphate	1.500
Sodium chloride	5.000

PRINCIPLE

The medium consists of Tryptose and lactose which are the energy and the carbon sources respectively. *E. coli* ferment lactose to form acid and gas. The gas produced gets trapped in the form of gas bubbles in the inverted Durhams tubes. Phosphates buffer the medium whereas sodium chloride helps to maintain the osmotic equilibrium of the medium.

INSTRUCTION FOR USE

- Dissolve 28.5 grams in 1000 ml purified / distilled water.
- For examination of 10 ml portions of water samples, use 57 grams per 1000 ml distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense into tubes with inverted Durham's fermentation tubes and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Light yellow coloured, clear solution without any precipitate.
pH (at 25°C) : 6.8 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Gas	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	50-100	Luxuriant	Positive reaction	45.5-46°C	24-48 Hours
<i>Klebsiella aerogenes</i>	13048	50-100	Poor	Positive reaction	45.5-46°C	24-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.













Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Eijkman, 1904, Centr. Bakt., 11th Abst., 37:742.
2. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed, J. B. Lippincott Company.
3. Norton C. F., 1940, Microbiology, 2nd Ed., Addison Wesley Publishing Company.
4. Perry C. A., 1939, Food Research, 4:381.
5. Perry C. A. and Hajna A. A., 1933, J. Bacteriol., 26:419.
6. Standard Methods for the Examination of Water and Wastewater, 11th Ed., 1960, APHA, N.Y.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Baukstrasse 10, 49163 Muenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.
*For Lab Use Only
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