Eugonic Agar

M428

Intended Use:

Recommended for cultivation of fastidious microorganisms like *Haemophilus, Neisseria, Pasteurella, Brucella* and *Lactobacillus* species.

Composition**

Ingredients	Gms / Litre
Tryptone	15.000
Soya peptone	5.000
Dextrose (Glucose)	5.000
Sodium chloride	4.000
Sodium sulphite	0.200
L-Cystine	0.200
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters
Equivalent to Papaic digest of soyabean meal

Directions

Suspend 44.4 grams in 1000 ml purified /distilled water. Heat to boiling with frequent stirring to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and add 5 -10% v/v sterile defibrinated blood if desired. The blood may be chocolated by heating, if chocolate agar plates are required.

Principle And Interpretation

Eugonic Agar was developed by Pelczar and Vera (1) for cultivation of fastidious organisms like *Brucella*. These media can also be used to grow *Mycobacteria* and various pathogenic fungi including *Nocardia, Histoplasma* and *Blastomyces*, when enriched with blood. Niven used this media for detection of spoilage of meats (2). Eugonic Agar was developed to obtain eugonic (luxuriant) growth of fastidious microorganisms like *Brucella* that are otherwise difficult to cultivate (3). The unnourished medium supports rapid growth of lactobacilli associated with cured meat products, dairy products and other foods. APHA recommends Eugonic agar, which is also used in germinating anaerobic spores pasteurized at 104°C (4,5). Eugonic Agar is quite similar to Tryptone Soya Agar (M290) but more bacterial propagation is expected on Eugonic Agar. Organisms like *Bordetella* and *Neisseria* form minute colonies on Tryptone Soya Agar (M290). They may become large on Eugonic agar because large amount of sulfur and carbon sources have been added in addition to the Tryptone Soya Agar (M290) formula. Therefore this medium is recommended for the direct isolation of *Bordetella pertussis* and *Neisseria meningitides* from the test materials such as throat mucus, blood, cerebrospinal fluid, pleural fluid and other specimens. For the isolation of *Bacillus pumilus*, Eugonic Agar can be supplemented with 0.1% starch, prior to sterilization (3). Tryptone and soya peptone provide the nitrogen, vitamins and amino acids, which supports the growth of fastidious microbial species. The high concentration of dextrose is the energy source for rapid growth of bacteria. L-Cystine and sodium sulphite are added to stimulate growth. Sodium chloride maintains the osmotic balance of the media. The high carbohydrate content along with high sulfur (cystine) content improves growth with chromogenicity (4).

Type of specimen

Clinical samples -throat mucus and other specimens; Food samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (6,7). For food samples, follow appropriate techniques for sample collection and processing as per guidelines (5). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use. For professional use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets

Limitations :

1. Biochemical testing is required for complete identification of bacteria.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.44% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed with added 5-10% sterile defibrinated blood after an incubation at 35-37°C for 48 hours (fungal cultures incubated at 25-30°C).

Organism	Inoculum (CFU)	Growth	Recovery
Bacillus pumilus ATCC 14884	50-100	good (with 0.1% starch)	50-70%
Candida albicans ATCC 26790	50-100	good	50-70%
Lactobacillus fermentum ATCC 9338	50-100	good	50-70%
Neisseria meningitidis ATCC 13090	50-100	good	50-70%
Streptococcus pneumoniae ATCC 6303	50-100	luxuriant(under 3-5% CO_2)	>=70%
Streptococcus pyogenes ATCC 19615	50-100	luxuriant(under 3-5% CO_2)	>=70%

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1.Pelczar and Vera J., 1949, Milk Plant Monthly 38:30

2.Niven C. F., Castellani A. G., and Allanson V., 1949, J. Bacteriol., 58:633

3.MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams & Wilkins, Baltimore, Md.

4.Frank H. A., 1955, J. Bacteriol., 70:269.

5.Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

6.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition

7.Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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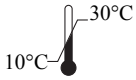
IVD — In vitro diagnostic medical device

CE Marking



Storage temperature

Do not use if package is damaged

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