Pfizer Selective Enterococcus Agar

M787

Pfizer Selective Enterococcus Agar is used for selective isolation and cultivation of Enterococci .

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	17.000
Peptic digest of animal tissue	3.000
Yeast extract	5.000
Bile salts	10.000
Sodium chloride	5.000
Sodium citrate	1.000
Esculin	1.000
Ferric ammonium citrate	0.500
Sodium azide	0.250
Agar	15.000
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 57.75 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into Petri plates

Warning : Sodium azide has a tendency to form explosive metal azides with plumbing materials. It is advisable to use enough water to flush off the disposables.

Principle And Interpretation

Enterococci may be considered an essential part of the autochthonous microflora of humans and animals. Because of its wide distribution, ,,Enterococci can also occur in different food commodities, especially those of animal origin (1, 2). A wide variety of selective media for *Enterococcus* has been recommended and used. Pfizer Selective Enterococcus Agar is used for the selective isolation and cultivation of Enterococci. This medium is formulated as per Isenberg, Goldberg and Sampson (4) by reducing the concentration of bile salts and sodium azide from the original formulation. The importance of esculin hydrolysis in differentiating Enterococci and streptococci was first reported by Rochaix as streptococci do not exhibit esculin hydrolysis (3).

Casein enzymic hydrolysate, peptic digest of animal tissue and yeast extract provide nutrients like nitrogenous compounds, carbon, sulphur, vitamin B complex and trace ingredients for the growth of Enterococci . Esculin, a glycoside, is hydrolyzed by Enterococci to esculetin and dextrose. Esculetin reacts with ferric ammonium citrate to form a dark brown to black coloured complex (6). Bile salts and sodium azide inhibit gram-positive (except Enterococci and gram-negative bacteria respectively. Pfizer Selective Enterococcus Agar is better used as selective primary medium (5).

Quality Control

Appearance
Light yellow to pale green homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Light amber coloured clear to slightly opalescent gel with a bluish tinge forms in Petri plates.

Reaction
Reaction of 5.8% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH
6.90-7.30

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours .

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Esculin hydrolysis
Cultural Response				
Enterobacter aerogenes ATCC 13048	>=10^3	inhibited	0%	
Escherichia coli ATCC 25922	>=10^3	inhibited	0%	
Staphylococcus aureus ATCC 25923	50-100	fair-good	30-40%	negative reaction
Enterococcus faecalis ATCC 29212	50-100	good-luxuriant	>=50%	positive reaction, blackening around the colony
Streptococcus pyogenes ATCC 19615	50-100	Good-luxuriant	>=50%	Negative reaction

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Belzer R., Vergleichende Untersuchungen von Enterokokkenselektivnährböden. Inaug. Dissert., Univ. München, 1983.
2. Burkwall M. K., a. Hartman, P.A.: Appl. Microbiol., 12; 18-23 (1964).
3. Rochaix, 1924, C. R. Soc. Biol., 90: 771.
4. Isenberg H. D., Goldberg D. and Sampson J., 1970, Appl. Microbiol., 20: 433.
5. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
6. MacFaddin J. F., 2000, Biochemical tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.

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