Technical Information

Pfizer Selective Enterococcus Agar

Product Code: DM1787

Application: - 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 (ox gall)	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

Principle & Interpretation

Enterococci may be considered an essential part of the autochthonous microflora of humans and animals. Because of its wide distribution, ,,Enterococci can especially occur in different food commodities, of animal origin [1, 2]. Different type of selective media for Enterococcus has been recommended and used. Pfizer Selective Enterococcus Agar media devised by Isenberg, Goldberg and Sampson [4] is used for the selective isolation and cultivation of Enterococci. This medium has been formulated 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 hydrolysed esculin [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].

Methodology

Suspend 57.75 grams of powder media in 1000 ml distilled water. Shake well & heat 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.

Quality Control

Physical 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 pH Range 6.90-7.30

Cultural Response/ characteristices

DM 1787: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Esculin hydrolysis
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

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

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.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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