Technical Information

Azide Dextrose Broth

Product Code: DM 1345

Application: Azide Dextrose Broth is used for detection and enumeration of Streptococci in water, sewage, food and other materials suspected of sewage contamination.

Composition**

Ingredients	Gms / Litre
Peptone, special	15.000
Beef extract	4.500
Dextrose	7.500
Sodium chloride	7.500
Sodium azide	0.200
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Being more resistant to chlorine in water, Enterococci acts better indicators for detecting sewage pollution than *Escherichia coli.* Till 1984, members of the genus *Enterococcus* were classified as Group D Streptococci. Upon genomic DNA analysis, a seperate genus status was given to them. [7]. Azide Dextrose Broth is recommended by APHA for enumeration of faecal Streptococci by MPN technique. Azide Dextrose Broth was initially formulated by Rothe, Mullmann and Seligmann [2, 3] for quantitative determination of Enterococci in water, foods and other materials suspected of contamination with sewage. When large volumes of water samples are to be examined, double strength both medium is used. Turbidity in tubes indicates presence of Enterococci, however, it should be further confirmed by inoculation in Ethyl Violet Azide Broth (DM1426).

Azide Dextrose Broth is a highly nutritious medium due to the presence of nutrient rich peptone special, beef extract and dextrose. Sodium azide inhibits growth of gram-negative bacteria, allowing Enterococci to grow [1, 4, 5] Streptococci detected by the above media should be further identified using chemicals [6].

Methodology

Suspend 34.7 grams of powder media in 1000 ml distilled water for preparing single strength broth or use 69.4 grams in 1000 ml distilled water for double strength broth. Shake well and heat, if necessary, to ensure complete solution. Dispense in test tubes and sterilize by autoclaving at 118°C for 15 minutes.

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

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Amber coloured clear solution without any precipitate.

Reaction

Reaction of 3.47% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH Range:- 7.00-7.40

Cultural Response/Characteristics

DM 1345: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC25922	>=10^3	Inhibited
Enterococcus faecalis ATCC29212	50-100	good-luxuriant

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Eaton A.D.,Clesceri L.S., and Greenberg A.E.,(Eds), 1998, Standard Methods for the Examination of Water and Wastewater, 20st Ed., APHA, Washington, D.C.
2. Mallmann and Seligmann, 1950, Am. J. Publ. Health, 40:286.
3. Rothe, 1948, Illinois State Health Department.
4. Edwards S.J., 1933, J. Comp. Path. Therap., 46:2111.
5. Hartman G., 1937, Milchw. Forsch, 18:166.
6. MacFaddin J.F.,1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical bacteria, Vol.1. Williams &Wilkins, Baltimore, Md.
7. Schleider K.H., Kilpper Bolz R., 1984, Int.J.Sys.Bacteriol., 34:31

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