Technical Information

Perfringens Agar Base (T. S. C. /S. F. P. Agar Base)

Product Code: DM 1837

Application: - Perfringens Agar Base with the addition of selective supplement and enrichment is used for the presumptive identification and enumeration of Clostridium perfringens from food

Composition**

Ingredients	Gms / Litre
Tryptose	15.000
Beef extract	5.000
Papaic digest of soyabean meal	5.000
Yeast extract	5.000
Sodium metabisulphite	1.000
Ferric ammonium citrate	1.000
Agar	15.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Tryptose Sulphite Cycloserine Agar (TSC) was originally formulated by Harmon et al [1] for the enumeration of *C.perfringens* from food. TSC Agar has been reported as one of the most useful media for the quantitative recovery of *C. perfringens* while suppressing growth of other facultative anaerobes [2]. Perfringens Agar Base is also recommended by APHA [3]. Perfringens Agar Base can be made selective either by addition of D-cycloserine (MS2014) [1, 2] or Kanamycin and Polymyxin B (MS2013) [4]. TSC Agar Base (with MS2014) or SFP Agar Base (with MS2013) is comparable in performance for isolation of *C. perfringens* [5, 6].

Tryptose, papaic digest of soyabean meal, yeast extract, beef extract provide nitrogenous compounds, carbon, sulphur, vitamin B complex and trace elements essential for clostridial growth. Sodium metabisulphite and ferric ammonium citrate act as an indicator of sulphite reduction, indicated by black coloured colonies. D-Cycloserine (MS2014), Kanamycin and Polymyxin B (MS2013) help in the selective isolation of *C.perfringens* by inhibiting accompanying flora. Egg yolk emulsion serves as a source of lecithin utilized by *C.perfringens* (DM1837).

Methodology

Suspend 23.5 grams of powder media in 475 ml distilled water. Shake well and heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°) for 15 minutes. Cool to 50°C. Add 25 ml of Egg Yolk Emulsion (MS2045) and rehydrated contents of 1 vial of S.F.P. Supplement (MS2013) / T.S.C. Supplement (MS2014). Alternatively if fluorogenic detection is desired add rehydrated contents of Clostridium perfringens supplements (MS2243) instead of MS2013 / MS2014. Mix well before pouring into sterile Petri

Quality Control

Physical Appearance

Light yellow to brownish yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Basal medium: Amber coloured clear to slightly opalescent gel. After Addition of Egg Yolk Emlusion (FD045) : Yellow coloured opaque gel forms in Petri plates

Reaction

Reaction of 4.7% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH Range 7.40-7.80

Cultural Response/ characteristices

DM 1837: Cultural characteristics observed under anaerobic condition with added TSC Supplement (MS2014)/S.F.P Supplement (MS2013)/Clostridium Perfringens Supplement (MS2243) and Egg Yolk Emulsion (MS2045), after an incubation at 35-37°C for 18-24 hours .

Organism	Inoculum (CFU)	Growth	Recovery	Sulphite Reduction	Lecithinase/ Haloes	Fluorescence
Clostridium perfringens ATCC 12924	50-100	luxuriant	>=50%	positive, blackening of medium	Positive reaction, opaque zone around the colony	Positive Reaction
Clostridium sordellii ATCC 9714	>=10^3	inhibited	0%			

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^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Harmon S. M., Kauttar D.A. and Peiler J. T., 1971, Appl. Microbiol., 22:688.
2. Harmon S. M. and Kautter D.A., 1987, J. Asso. Off. Anal. Chem., 70: 994.
3. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
4. Shahidi S. A. and Ferguson A R., 1971, Appl. Microbiol., 21,500
5. Horwitz, (Ed.), Official Methods of Analysis of AOAC International, 17th Ed., AOAC International, Gaithersburg, Md.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

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