PERFRINGENS AGAR BASE (T.S.C./S.F.P AGAR BASE) TM 615

For presumptive identification and enumeration of *Clostridium perfringens*

Composition

Ingredients	Gms/Ltr.
Agar	15.00
Tryptone	15.00
Beef extract	5.00
Peptic digest of Soyabean meal	5.00
Yeast extract	5.00
Sodium metabisulphite	1.00
Ferric ammonium citrate	1.00

* Dehydrated powder, hygroscopic in nature, store, in a dry place in tightly- sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 47.0gms in 950ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool to 50°C. Add 50 ml of **Egg yolk emulsion (TS 002)** and rehydrated contents of 2 vial of **S.F.P supplement (TS 054) or T.S.C supplement (TS 076)**. Mix well and pour into sterile Petri plates.

Appearance: Amber colour, clear to slightly opalescent gel, after the addition of Egg yolk emulsion turns yellow colour
pH (at 25°C): 7.6 ± 0.2

Principle

PERFRINGENS AGAR BASE (T.S.C./S.F.P AGAR BASE) is used for presumptive identification and enumeration of *Clostridium perfringens*. TSC Agar has been documented as one of the most useful media for the quantitative recovery of *C. perfringens* while suppressing growth of other facultative anaerobes

Medium consists of Tryptone, Peptic 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. **S.F.P supplement (TS 0054) or T.S.C supplement (TS 076)** help in the selective isolation of *C. Perfringens* by inhibiting accompanying flora. These antibiotics can also be added to the sterile, liquefied culture medium in the form of filter-sterilized solutions. Egg yolk emulsion serves as a source of lecithin utilized by *C. Perfringens*. No lecithinase activity can be detected without egg yolk but not all *Clostridium perfringens* strains show an opaque zone after overnight incubation. So both black lecithinase-positive and black lecithinase-negative colonies should be considered as presumptive *Clostridium perfringens* on SFP or TSC Agar and need further confirmatory tests like nitrate reduction, lactose fermentation, gelatin liquefaction and the absence of motility.

Interpretation

Cultural characteristics observed after inoculating (10^3CFU/ml), on incubation at 44° C for 18 – 24 hour.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Sulphite Reduction	Lecithinase/Halos
Clostridium perfringens	12924	10^3	Luxuriant	Blackening of medium	Positive reaction/ opaque zone

References

1. American Public Health Association: Compendium of methods for the microbiological examination of foods. - 3rd. (1992).
2. Downes F. P. and Ito K., (Eds.), Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C. (2001).
3. DIN Deutsches Institut für Normung e.V.: Mikrobiologische Untersuchung von Fleisch und Fleischerzeugnissen. Bestimmung von Clostridium perfringens. Plattenguß-Verfahren (Referenzverfahren). - **DIN 10165.**
4. Harmon S. M. and Kautter D.A., J. Asso. Off. Anal. Chem., 70: 994. (1987).
5. Hauschild A. H. W. and Hilsheimar R. Appl. Microbiol. 27. 521-526. (1974).
6. Hauschild A. H. W., Gilbert R. J., Harmon S. M., O'Keefe M. F. and Vahlfeld R. Can. J. Microbiol. 23. 884-892. (1977).