



Technical Data

KF Streptococcal HiCynth™ Agar Base

MCD248

KF Streptococcal HiCynth™ Agar Base is used for selective isolation and enumeration of faecal *Streptococci* in surface water by direct plating or by membrane filter method.

Composition**

| Ingredients | Gms / Litre |
|-------------------------|-------------|
| HiCynth™ Peptone No.3* | 10.000 |
| HiCynth™ Peptone No.6* | 10.000 |
| Sodium chloride | 5.000 |
| Sodium glycerophosphate | 10.000 |
| Maltose | 20.000 |
| Lactose | 1.000 |
| Sodium azide | 0.400 |
| Agar | 20.000 |
| Final pH (at 25°C) | 7.2±0.2 |

**Formula adjusted, standardized to suit performance parameters

*Chemically defined peptones

Directions

Suspend 76.4 grams in 1000 ml distilled water. Add rehydrated contents of 1 vial of Bromo Cresol Purple (FD093). Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Overheating will lower the pH and render the medium less productive. Cool to 45-50°C and aseptically add 10 ml of 1% 2, 3, 5-Triphenyl Tetrazolium Chloride (TTC) (FD057) to sterile medium. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Streptococci are spherical, gram-positive bacteria and form a part of the normal commensal flora of the mouth, skin, intestine, upper respiratory tract of humans. Streptococci found in the faeces form the faecal Streptococci and constitute of Streptococci with group D Lancefield antigens. The types include *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus bovis* and *Streptococcus duran*. They are low-grade pathogens and rarely cause disease. However, they may cause urinary tract infection in catheterized patients; mixed abdominal wound infections following gut surgery; and endocarditis on abnormal valves. Kenner-Faecal (KF) Medium was developed by Kenner et al (1, 2) for detecting Streptococci in water and food materials. KF Streptococcus Agar Base is recommended by APHA for enumerating faecal Streptococci in food materials (3). KF Streptococcus HiCynth™ Agar Base is prepared by replacing animal peptones with chemically defined peptones to avoid BSE/TSE risk.

HiCynth™ Peptone No.3 and HiCynth™ Peptone No.6 provides nitrogen, carbon compounds, long chain amino acids, vitamins and trace ingredients to the faecal Streptococci. Lactose and maltose are the fermentable carbohydrates and therefore serve as energy sources. Sodium azide is a selective agent, which hampers the growth of gram-negative bacteria. 2,3,5-Triphenyl Tetrazolium Chloride is reduced to insoluble formazan by actively metabolizing cells, resulting in the formation of pink or red colonies. Bacteria resistant to azide, utilize lactose and / or maltose. The acidity so produced changes the colour of the indicator dyes to yellow. Bacterial cells reduce TTC to insoluble formazan, resulting in the formation of pink to red colonies.

Samples can be directly streaked or sterile membrane filters through which the water samples have been passed are aseptically placed on the media. After an incubation at 35-37°C for 24-48 hours, Enterococci appear as pink to red colonies. After this presumptive identification, further confirmatory tests should be carried out (4, 5).

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Please refer disclaimer Overleaf.

Firm, comparable with 2.0% agar gel.

Colour and Clarity of prepared medium

Basal medium : Light yellow. After addition of FD093 (Bromo Cresol Purple) : Light purple coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 7.64% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

Cultural characteristics observed with added FD057 and FD093, after an incubation at 35-37°C for 48-72 hours.

Cultural Response

| Organism | Inoculum (CFU) | Growth | Recovery | Colour of colony |
|---|------------------|----------------|----------|------------------|
| Cultural Response <i>Enterobacter aerogenes</i> ATCC 13048 | ≥10 ³ | inhibited | 0% | |
| <i>Enterococcus faecalis</i> ATCC 50-100 29212 | | good-luxuriant | ≥50% | red-maroon |
| <i>Escherichia coli</i> ATCC 25922 | ≥10 ³ | inhibited | 0% | |

Storage and Shelf Life

Store below 30°C in a tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Reference

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