# 60641 KF-Streptococcus Agar (Kenner Fecal Agar) NutriSelect® Plus

For the detection and enumeration of enterococci in water, food and other material.

**Composition:**

| Ingredients | Grams/Litre |
|---|---|
| Proteose peptone | 10.0 |
| Yeast extract | 10.0 |
| Sodium chloride | 5.0 |
| Sodium glycerophosphate | 10.0 |
| Maltose | 20.0 |
| Lactose | 1.0 |
| Sodium azide | 0.4 |
| Bromocresol purple | 0.015 |
| Agar | 20.0 |

Final pH 7.2 +/- 0.2 at 25°C

Store dehydrated powder between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Protect from moisture and light by keeping container in a low humidity environment.

Appearance(color): Faintly yellow to yellow to brown, free flowing powder
Gelling: Firm, comparable with 2.0% agar gel
Color and Clarity: Light purple coloured, clear to slightly opalescent gel forms in Petri plates

**Directions:**
Add 76 g to 1 litre distilled water and dissolve by boiling. Dispense into 100 ml portions and sterilize by autoclaving at 121°C for 10 minutes. When ready to use, cool to 50°C and add 1 ml of 1% triphenyltetrazolium chloride solution (Cat. No. 17779) per 100 ml. Do NOT overheat this medium.

**Principle and Interpretation:**
Streptococci are Gram-positive, nonmotile, nonsporeforming, catalase-negative cocci that occur in pairs or chains. Older cultures may lose their Gram-positive character. Most streptococci are facultative anaerobes, and some are obligate (strict) anaerobes. Most require enriched media (blood agar). 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.
KF Streptococcus Agar is based on the formulation described by Kenner *et al (1,2)*and is recommended (3) for the detection and enumeration of enterococci in faeces, milk, water and other materials by the pour-plate or membrane filtration method. The presence of enterococci in the material under test is indicative of faecal pollution by man or animals.
Proteose peptone & yeast extract provide nitrogen, carbon, sulphur, 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 being a selective agent 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 producing acidic conditions which results in change of the color of the

indicator dye bromocresol purple to yellow. Bacterial cells reduce TTC to insoluble formazan, resulting in the formation of pink to red colonies.

Cultural characteristics after 48-72 hours at 35-37°C with added TTC solution.

| Organisms (ATCC/WDCM) | Inoculum (CFU) | Growth | Recovery | Appearance of Colony |
|---|---|---|---|---|
| Klebsiella aerogenes (13048/ 00175) | $\geq 10^4$ | - | 0% | |
| *Enterococcus faecalis (*29212/00087) | 50-100 | ++/+++ | >=50% | red-marron |
| *Escherichia coli* (25922/00013) | $\geq 10^4$ | - | 0% | |

References:
1. Kenner B. A., Clark H. F. and Kabler P. W., 1960, Am. J. Public Health, 50:1553.
2. Kenner B. A., Clark H. F. and Kabler P. W., 1961, Appl. Microbiol., 9:15.
3. American Public Health Association (1981) *Standard Methods for the Examination of Water and Wastewater, 15th Edn. APHA Inc. Washington DC*.

**Precautions and Disclaimer**
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.