KF Streptococcus Agar (i23235)

Used with TTC Solution 1% for isolation and enumeration of fecal *streptococci*.

Industry: Water / Food

Principles & Uses

Kenner-Faecal (KF) Medium, developed by Kenner et al., is used for detecting *Streptococci* in water and food materials, especially faecal *Streptococci* with group D Lancefield antigens, such as *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus bovis*, and *Streptococcus durans*. These *Streptococci* are generally low-grade pathogens but can cause issues like urinary tract infections in catheterized patients, mixed abdominal wound infections following gut surgery, and endocarditis on abnormal heart valves. The medium provides the necessary nutrients for these bacteria with special peptone and yeast extract. Lactose and maltose are fermentable carbohydrates serving as energy sources. Sodium azide selectively inhibits gram-negative bacteria. By incubating at 35-37°C for 24-48 hours, pink to red colonies of *Enterococci* are formed due to their metabolic activity, which reduces 2,3,5-triphenyl tetrazolium chloride (TTC) to formazan, resulting in pink to red colonies. After presumptive identification, further confirmatory tests should be conducted. The method is recommended by APHA for detecting *enterococci* in water and food materials, and results are determined by counting the red or pink colonies.

Enterococci primarily metabolize maltose and lactose with acid production, which promotes their growth, while sodium azide suppresses undesirable microorganisms. Acid production is detected by bromocresol purple, causing a color change to yellow. The membrane filtration method is recommended for detecting small numbers of *enterococci*, while the pour plate method is suitable for larger numbers. After incubating aerobically at 35°C for 48 hours, red or pink colonies can be counted, allowing for the calculation of bacterial counts.

Composition (gr/L)

Proteose Peptone No. 3 10, Yeast extract 10, Sodium chloride 5, Sodium Glycerophosphate 10, Maltose 20, Lactose 1, Sodium azide 0.4, Bromocresol Purple 0.015, Agar 20.

Final pH at 25°C 7.2 ± 0.2

Preparation from dehydrated Powder

Suspend 76.4 g in 1 Liter of distilled water. Bring to the boil with frequent agitation. Boil for 5 minutes (or autoclave 10 min at 121°C, if total selectivity is required). **DO NOT OVERHEAT.** Aseptically add 10 mL of TTC solution 1% to the medium cooled to 50°C. Mix well.

Quality Control

Dehydrated Appearance: Light greenish-beige, homogeneous, free-flowing.

Prepared Appearance: Light purple, very slightly to slightly opalescent.

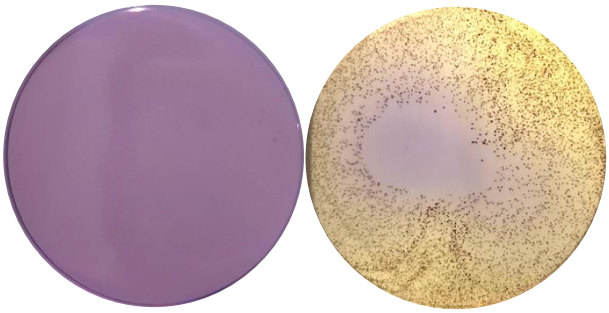
Reaction of 7.64% Solution at 25°C: pH 7.2 ± 0.2

Cultural Response

Inoculate using the pour plate technique and incubate at 35 ± 2°C for 46-48 hours.

Organism (ATCC*)	Recovery	Colony Color	Yellow zone
Escherichia coli (25922)	inhibition	-	-
Enterococcus faecalis (19433)	Good	Red to pink centers	+
Enterobacter aerogenes (13048)	inhibition	-	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Prepared culture medium on the left appears purple in color. On this medium, colonies *of Enterococcus faecalis* are visible as pink to red with a yellow halo around them.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.