PRODUCT SPECIFICATION SHEET

KF Streptococcal Agar Base (DM123)

Intended Use

KF Streptococcal Agar Base (DM123) is recommended for selective isolation and enumeration of faecal *Streptococci* in surface water by direct plating or by MF technique.

Product Summary and Explanation

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. KF (Kenner Fecal) Streptococcus Agar is based on the formulation described by Kenner et al.[1,2] and is recommended for the detection and enumeration of enterococci in faeces, milk, water and other materials by the pourplate or membrane filtration methods. These investigators compared the performance of their formulation to other media used for enumerating fecal streptococci and achieved greater recoveries with KF Streptococcal Agar. KF Streptococcus Agar Base is selective for the following Group D and Group Q species. KF Streptococcus Agar Base is recommended by APHA, for enumerating faecal Streptococci in food materials.[3]

Principles of the Procedure

KF Streptococcus Agar Base contains special peptone which serves as sources of nitrogen and carbon. Yeast extract supplies vitamins, amino acids and trace ingredients to the faecal Streptococci. Lactose and maltose are the fermentable carbohydrates and therefore serve as carbon and energy sources. Sodium azide is a selective agent, which hampers the growth of gram-negative bacteria. Bromcresol purple is an indicator dye. 2,3,5-Triphenyl Tetrazolium Chloride is used as a redox indicator in culture media. It is colorless in the oxidized form and 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,[4] resulting in the formation of pink to red colonies. In this medium, the addition of 1% TTC causes enterococci to develop a deep red color.

Formula / Liter

Ingredients	Gms / Liter
Peptone, special	10.00
Yeast extract	10.00
Sodium chloride	5.00
Sodium glycerophosphate	10.00
Maltose	20.00
Lactose	1.00
Sodium azide	0.40
Agar	20.00
Final pH: 7.2 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

3. Sodium azide has a tendency to form explosive metal azides with plumbing materials. It is advisable to use enough water to flush off the disposables.

Directions

1. Suspend 76.4 grams of the medium in one liter of distilled water.
2. Add rehydrated contents of 1 vial of Bromo Cresol Purple (MS060).
3. Heat to boiling, to dissolve the medium completely.
4. DO NOT AUTOCLAVE.
5. Overheating will lower the pH and render the medium less productive.
6. Cool to 50°C and aseptically add 10 ml of 1% 2, 3, 5-Triphenyl Tetrazolium Chloride (TTC) (MS029).
7. Mix well and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Basal medium : Light yellow. After addition of MS060 (Bromo Cresol Purple) : Light purple coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 7.64% solution	pH 7.2 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 2.0% agar gel.

Expected Cultural Response: Cultural characteristics observed with added MS029 and MS060, after an incubation at 35-37°C for 48-72 hours.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Recovery	Colour of colony
1.	*Enterobacter aerogenes ATCC 13048*	>=10^3	inhibited	0%	
2.	*Enterococcus faecalis ATCC 29212*	50-100	good-luxuriant	>=50%	red-maroon
3.	*Escherichia coli ATCC 25922*	>=10^3	inhibited	0%	

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Pour Plate Technique

1. Prepare appropriate dilutions of the test material.
2. Place the selected volume of sample in a Petri dish.
3. Pour 15 mL of the prepared medium at 45-50°C into each plate.
4. Thoroughly mix the medium and sample to uniformly disperse the organisms.
5. Allow the agar to solidify.
6. Incubate plates in the inverted position at 35-37°C for 48-72 hours.

Membrane Filter Procedure

1. Filter a suitable volume of sample through a sterile membrane.
2. Place the inoculated membrane filter on the solidified agar in the Petri dish, inoculum side up.
3. Incubate the plates, inverted, at 35-37°C for 48-72 hours.

Results

Enterococci will appear as red or pink colonies. The use of a stereoscopic microscope with 15X magnification can aid in counting colonies.

PRODUCT SPECIFICATION SHEET

Storage
Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration
Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure
1. Many strains of *S. bovis* and *S. equinus* are inhibited by azide.
2. Overheating may lower the pH, causing a decrease in the productivity of the medium.
3. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
4. Consult appropriate texts for detailed information and recommended procedures.

Packaging
Product Name : KF Streptococcal Agar Base
Product Code : DM123
Available Pack sizes : 500gm

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. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
4. Kelly and Fulton. 1953. Am. J. Clin. Pathol. *23*:512.

Further Information
For further information please contact your local MICROMASTER Representative.

MICROMASTER LABORATORIES PRIVATE LIMITED
Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall' , Thane (W) – 400607. M.S. INDIA.
Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.
Email: micromaster@micromasterlab.com
sales@micromasterlab.com

DM123PSS,QAD/FR/024,Rev.00/01.01.2018

Prepared By	Checked By	Approved By
01.01.2018	01.01.2018	01.01.2018
Microbiologist	Head Quality Control	Head Quality Assurance

Disclaimer :

All Products conform exclusively to the information contained in this and other related Micromaster Publications. Users must ensure that the product(s) is appropriate for their application, prior to use. The information published in this publication is based on research and development work carried out in our laboratory and is to the best of our knowledge true and accurate. Micromaster Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are intended for laboratory, diagnostic, research or further manufacturing use only and not for human or animal or therapeutic use, unless otherwise specified. Statements included herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.