Technical Data

Universal Filter Membrane Medium w/ Sterile Membrane Filter

MF018F

For total bacterial detection and enumeration based on chromogenic differentiation.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Peptic digest of animal tissue	5.000
Dextrose	10.000
Maltose	10.000
Final pH (at 25°C)	5.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

The test sample should be filtered through a sterile membrane filter having pore size of 0.22µ / 0.45µ. Rehydrate the nutrient pad with 2.0 - 2.5 ml sterile distilled / purified water. After filtration, remove the membrane filter aseptically using sterile forceps. Place the membrane filter on rehydrated nutrient pad. Incubate the inoculated nutrient. Interpret the results qualitatively by observing the presence or absence of growth and quantitatively by counting the number of colonies on the surface of the membrane filter and calculating CFU/ml.

Principle And Interpretation

Field of Application: Water, waste water, pharmaceuticals, cosmetics, packing materials and other clinical test materials. DriFilter Membrane Nutrient Pad Medium is ready to use sterile culture media in the form of a 50 mm biological inert absorbent pads impregnated with HiChrome Universal Differential medium, then dried and sterilized in 55 mm petri plate. They eliminate the need of laborious media preparation and autoclaving procedures. The nutrient pads are to be just rewetted with sterile distilled water and are ready to use. Use of nutrient pads allows larger sample volumes to be tested at a time. Interpretation of results is directly by counting the CFUs and also quantifies the microbial load present in the sample. HiChrome Universal Differential Medium is a modification of the medium formulated on basis of the work carried out by Pezzlo (1), Wilkie et al (2), Friedman et al (3), Murray et al (4), Soriano and Ponte (5) and Merlino et al (6). HiChrome Universal Differential Medium is recommended for the presumptive identification of microorganisms from clinical and non-clinical specimens where the medium has broader application as a general nutrient agar for isolation of various microorganisms. This medium helps in the identification of some gram-positive bacteria and gram-negative bacteria on the basis of different colony colours exhibited by them. These colours are formed due to the reactions of genus or species specific enzymes with the two chromogenic substrates incorporated in the medium. *Enterococcus* species, *Escherichia coli* and coliforms produce enzymes which specifically cleave these chromogenic substrates to give characteristically distinctive colony colours. Peptones in the medium serve as sources of amino acids like phenylalanine and tryptophan which aids in indicating tryptophan deaminase activity, thereby facilitating the identification of *Proteus* species, *Morganella* species and *Providencia* species. One of the chromogenic substrate is cleaved by ß-glucosidase enzyme possessed by *Enterococci* resulting in the formation of bluish green colonies. *Escherichia coli* possesses the enzyme ß- galactosidase which specifically cleaves the other chromogenic substrate resulting in the formation of purple coloured colonies. *Escherichia coli* can be differentiated and confirmed from other similar coloured colonies, by performing the indole test. Coliforms cleave both the chromogenic substrates forming blue to purple coloured colonies. Colonies of *Proteus, Morganella* and *Providencia* species appear brown due to tryptophan deaminase activity.Peptic digest of animal tissue and casein enzymic hydrolysate provide nitrogenous, carbonaceous compounds, essential growth nutrients and also serve as a source of amino acids.

Quality Control

Appearance
Dry filter membrane pad of 50mm diameter

Colour
Light yellow coloured pad.

Sterility test

Passes release criteria

Cultural response
Cultural characteristics observed after incubation at 35-37ºC for 18-24 hours

Organism	Growth	Colour of colony
Enterococcus faecalis ATCC 29212	Luxuriant	Blue-green, small
Pseudomonas aeruginosa ATCC 27853	Luxuriant	Colourless (greenish pigment may be observed)
Staphlycoccus aureus ATCC 25923	Luxuriant	Golden yellow
Proteus mirabilis ATCC 10975	Luxuriant	Light brown
Escherichia coli ATCC 25922	Luxuriant	Purple
Klebsiella pneumoniae ATCC 13883	Luxuriant	Blue-green, mucoid

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label.

Reference

1.Pezzlo M (1998), Clinical Microbiology Reviews 1:268-280 2.Wilkie M.E., Almond M.K., Marsh F.P. (1992), British Medical Journal 305:1137-1141. 3.Friedman M.P. et al (1991), Journal of Clinical Microbiology, 29:2385-2389. 4.Murray P., Traynor P. Hopson D., (1992), Journal of Clinical Microbiology 30:1600-1601. 5.Soriano F., Ponte C., (1992), Journal of Clinical Microbiology 30:3033-3034. 6.Merlino et al (1995) Abstr. Austr. Microbiol. 16(4):17-3.

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