

Product Information

63646 Membrane filter ENDO Broth (MF ENDO Broth)

For the detection and enumeration of coliform bacteria in water, milk and other liquids by means of the membrane filter technique.

Composition:

Ingredients	Grams/Litre
Tryptose	10.0
Meat peptone	5.0
Casein peptone	5.0
Yeast extract	1.5
Sodium chloride	5.0
Dipotassium hydrogen phosphate	4.375
Potassium dihydrogen phosphate	1.375
Lactose	12.5
Sodium deoxycholate	0.1
Sodium dodecyl sulfate	0.05
Fuchsin basic	1.05
Sodium sulfite	2.1
Final pH 7.2 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Slightly brownish-red to beige colored, homogeneous, free flowing powder.

Color and Clarity: Red-brown colored, slightly turbid solution.

Directions :

Dissolve 48 g in 1 litre distilled water and heat to boiling (up to 30 min) until completely dissolved. Do NOT autoclave. For the preparation of Membrane filter ENDO Agar add 14 g/l agar before boiling.

Principle and Interpretation:

Membrane filter ENDO Broth was original formulated from Millipore for selective isolating of coliforms from water and other specimens using the membrane filtration technique. The medium is a combination of the m HD Endo Medium and Lauryl Tryptose Broth. The versatile nutrient base allows selective isolation of Lactose-positive coliforms. Tryptose, meat peptone, casein peptone and yeast extract supplies carbon, nitrogen, vitamins, minerals and B-complex vitamins to the bacteria. Lactose is the fermentable sugar and lactose-positive colonies are coloured red because they produce acetaldehyde that reacts with the sodium sulfite and fuchsin to form red colonies. Sodium sulfite is added to decolorize the basic fuchsin solution by building the compound fuchsin-sulfate. Lactose-positive coliforms develop a metallic sheen when the organism produces aldehydes with the rapid fermentation of lactose. If the inoculum is too heavy, the sheen will be suppressed. The potassium phosphates are used for the buffer system and sodium chloride maintains the osmotic balance of the medium. Accompanying gram-positive bacteria are inhibited by lauryl sulfate and sodium deoxycholate. To improve the antibacterial nature of the formulation 20 ml/l non-denatured ethanol can be added.

All colonies that are red and have the characteristic metallic sheen are considered to be coliforms. The sheen can cover the entire colony, but also only in the center or only around the edges. Lactose-nonfermenting bacteria, which can growth on this media form clear, colorless colonies. Occasionally, noncoliform organisms produce typical sheen

colonies. Also occasionally coliforms are detected which produce atypical colonies (dark red or nucleated colonies without a sheen). Further confirmation is recommended [9].

This medium is used to impregnate on absorbent pads on which the inoculated filters are placed. Add 1.8-2 ml medium to each sterile pad in Petri dishes and place filter top side up on the pad using a rolling motion to avoid entrapping air bubbles.

Cultural characteristics after 22-24 hours at 35°C.

Organisms (ATCC)	Growth	Lactose-poitive	Metallic sheen
<i>Escherichia coli</i> (25922)	+++	+	+
<i>Klebsiella pneumoniae</i> (13883)	+++	+	+
<i>Enterobacter cloacae</i> (13047)	+++	+	+
<i>Salmonella typhimurium</i> (14028)	+++	-	+
<i>Proteus mirabilis</i> (14153)	+++	-/-	-
<i>Aeromonas hydrophila</i> (7966)	+++	-	-
<i>Staphylococcus aureus</i> (6538)	-	-	-

References:

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10. Kim and Feng, In Downes and Ito (ed.), Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C. (2001)

Precautions and Disclaimer

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