

Technical Information

M-HD Endo Broth w/ BG

Product Code: DM 2118

Application: - M-HD Endo Broth w/ BG is recommended for the detection of coliform in highly polluted waters using membrane filter technique.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Peptic digest of animal tissue	10.000
Yeast extract	3.000
Lactose	20.000
Sodium deoxycholate	0.200
Sodium chloride	5.000
Dipotassium phosphate	6.000
Sodium sulphite	2.100
Brilliant green	0.140
Final pH (25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Coliform bacteria are traditionally a group of bacteria that are aerobic and facultatively anaerobic, gram-negative, non spore-forming, rod-shaped, fermenting lactose with gas and acid production at 35°C in 24 to 48 hours ⁽¹⁾. The bacteria are used as indicators of faecal contamination water from sewage and thus are of sanitary significance. Coliform bacteria usually excreted from the intestinal tract of warm blooded animals and originate from wood industry, surfaces of red wood water tanks; biofilms within drinking water distribution systems ⁽²⁾. may enter the water & make it unfit for human consumption.

M-HD Endo Broth w/ BG formulated by Hajna and Damon ⁽³⁾ is used for detection of coliforms in highly polluted water using membrane filter technique ⁽⁴⁾. This medium is a modification of M-HD Endo Broth (DM2118) with the basic fuchsin in the later being replaced with Brilliant green in the former.

M-HD Endo Broth w/ BG contains casein enzymic hydrolysate, peptic digest of animal tissue and yeast extract as the sources of essential nutrients. Lactose is the fermentable carbohydrate and energy source. Sodium deoxycholate and brilliant green act as selective agent against non-coliform bacteria including Shigella species ⁽⁴⁾. Sodium chloride maintains osmotic equilibrium while phosphate buffers the medium. Brilliant green along with sodium sulphite forms the indicator system.

Sterile cotton absorbent pads are saturated with around 2 ml of M-HD Endo Broth w/ BG. Membrane filter through which the test water sample has been passed is aseptically placed on these cotton pads. Following an incubation at 35-37°C for 18-24 hours, lactose-fermenting coliforms will form green colonies with metallic sheen. Non-lactose fermenting coliforms will form colourless colonies.

Methodology

Suspend 56.44 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. DO NOT AUTOCLAVE. Dispense as desired. It is preferable to use the medium on the same day of preparation.

Quality Control

Physical Appearance

Cream to light green homogeneous free flowing powder

Colour and Clarity of prepared medium

Dark green coloured clear solution without any precipitate

Reaction

Reaction of 5.64% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH range

7.30-7.70

Cultural Response/ characteristics

DM 2118: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of Colony (on Membrane filter)
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	green with metallic sheen
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	green
<i>Salmonella Typhi</i> ATCC 6539	50-100	luxuriant	colourless
<i>Staphylococcus aureus</i> ATCC 25923	>=10 ³	inhibited	

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Dutka B. J., Chau A. S. Y., Coburn J., 1974, Water Res. 8 : 1047-1055
2. Hurst C. J., Knudsen G. R., McInerney M. J., Stetzenbach L. D., Walter M. V. (Eds.) 1997, Microbiology, ASM, Washington, D.C.
3. Hajna A. A. and Damon S. R., 1954, Public Health Rep., 69, 58
4. MacFaddin J. F. , 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical and Wilkins, Baltimore

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