
Product Name : m-TEC Agar, Modified

A selective culture medium used for the chromogenic detection and enumeration of thermotolerant *Escherichia coli* in water.

FORMULA (G/L)

Proteose Peptone No. 3	5.0
Yeast Extract	3.0
Lactose	10.0
Sodium Chloride	7.5
Dipotassium Phosphate	3.3
Monopotassium Phosphate	1.0
Sodium Lauryl Sulfate	0.2
Sodium Desoxycholate	0.1
X-GlcA.....	0.5
Agar	15.0
Final pH = 7.3 ± 0.2 at 25°C.	

DIRECTIONS

Suspend 45.6 G of powder in 1 L of distilled or deionized water. Heat to boiling until completely dissolved. Sterilize in autoclave at 121°C for 15 minutes. Cool to 45-50°C in a water bath. Dispense 5 mL amounts into 9 × 50 mm or 15 × 60 mm plates and allow to solidify. Test samples of the finished product for performance using stable, typical control cultures.

DESCRIPTION

m-TEC Agar, Modified is an acronym for "membrane Thermotolerant *E. coli*." *E. coli* is widely used as an indicator of fecal pollution in water. This medium is recommended for testing the presence of *E. coli* as an indicator organism for fecal contamination in fresh recreational water. This allows for a wide range of sample volumes or dilutions to be analyzed by membrane filtration for the detection and enumeration of *E. coli* levels in water.

TECHNIQUE

1. Collect and prepare water samples in accordance with recommended guidelines.
2. Test required sample volumes following the membrane filtration procedure described in Standard Methods for the Examination of Water and Wastewater. Select sample volumes to produce 20-80 colonies on the membrane filter.
3. After sample has been filtered, aseptically remove membrane filter from filter base and roll it onto m-TEC Agar, Modified to avoid the formation of bubbles between the membrane and the agar surface.
4. Invert inoculated plates and incubate for 2 hours at 35 ± 0.5°C to resuscitate injured cells.
5. After a 2 hour incubation at 35 ± 0.5°C, transfer the plates to a plastic bag, seal the bag, and place it onto a rack in a 44.5 ± 0.2°C water bath for 22 - 24 hours.
6. After the 22-24 hours incubation, remove the plates from the water bath and count and record the number of red or magenta colonies using an illuminated lens with a 2-5× magnification or a stereoscopic microscope.
7. Calculate and report the number of *E. coli* colonies per 100 mL of sample.

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QUALITY CONTROL

Dehydrated medium

Appearance: free-flowing, homogeneous.

Color: light beige.

Prepared medium

Appearance: clear.

Color: light tan.

Incubation conditions 35°C / 2 hours and 44.5 ± 0.2°C / 22-24 hours.

Microorganism	ATCC	Growth	Characteristics
<i>Enterococcus faecalis</i>	19433	markedly inhibited	-
<i>Escherichia coli</i>	13762	good	purple, reddish-purple
<i>Proteus mirabilis</i>	25933	good	tan

PERFORMANCE AND LIMITATIONS

1. The 35°C incubation step is required to resuscitate stressed organisms. The 44.5°C incubation temperature is required to inhibit non-thermotolerant organisms.
2. Choose a water sample size that will result in 20-80 colonies per filter. Plates containing more than 80 colonies are not recommended because high counts may not provide accurate test results.
3. Minimize the exposure of m-TEC Agar, Modified to light before and during incubation, as light may destroy the chromogen.

STORAGE

The powder is very hygroscopic: store the powder at room temperature, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident. Store prepared medium at 2-6°C.

REFERENCES

1. U.S. Environmental Protection Agency. 2002. Method 1603: *Escherichia coli* (*E. coli*) in water by membrane filtration using modified membrane-thermotolerant *Escherichia coli* agar (modified mTEC). Publication EPA-821-R-02-023. USEPA Office of Water, Office of Science and Technology, Washington, DC.
2. Clesceri, Greenberg and Eaton (ed.). 1998. Standard methods for the examination of water and wastewater, 20th ed. American Public Health Association, Washington, D.C.

PACKAGING

Cat. No : MB-T1032-1 m-TEC Agar, Modified	100 G
Cat. No : MB-T1032 m-TEC Agar, Modified	500 G