LMX Broth, Modified | AS-1277

Used for simultaneous detection of total *coliforms* and *E. coli* in water, food and dairy products by the fluorogenic procedure.

LMX Broth, modified, was created to quickly identify and distinguish between *E. coli* and total *coliforms*. Manafi and Ossmer improved upon the original formulation of Kneifel and Manafi. Phosphate buffers promote the growth of *coliform* bacteria, whereas lauryl sulfate inhibits Gram-positive bacteria. The simultaneous detection of *E. coli* and total *coliforms* is made easier by the addition of chromogenic and fluorogenic substrates. *Coliforms* are indicated by a color shift from yellow to blue-green, and *E. coli* is confirmed by blue fluorescence when exposed to UV light. Enzyme activity is increased by tryptophan and 1-isopropyl-β-D-1-thio-galactopyranoside, which also raises the sensitivity and specificity of the medium.

Composition (gr/L)	
Tryptose	5
Sodium Chloride	5
Sorbitol	1
Tryptophan	1
Dipotassium hydrogen phosphate	2.7
Potassium dihydrogen phosphate	2
Lauryl sulfate sodium salt	0.1
X-GAL	0.08
MUG	0.05
IPTG	0.1
Final pH at 25°C	6.8 ± 0.2

Preparation

If 100 ml water samples are to be tested, prepare a double strength medium. Dissolve 34 g of the powder into 1 litter distilled water. Heat to boiling to dissolve completely. Transfer 100 ml aliquots into 250 ml bottles. Autoclave for 15 min at 121°C. The prepared broth is clear and yellowish-brown.

Quality Control

Dehydrated Appearance: Cream to light yellow, homogeneous, free flowing.
Prepared Appearance: Cream to light yellow.
Reaction of 1.17% Solution at 25°C: pH 6.8 ± 0.2

Microbial Test Results

Incubate at 35 ± 0.5 °C for 18 to 48 hours.

Organism (ATCC)	Color Change to Blue-Green	Fluorescence	Indole
Escherichia coli (25922)	+	+	+
Shigella flexneri (12022)	-	-	-
Enterobacter aerogenes (13048)	+	-	-
Salmonella typhimurium (14028)	-	-	-
Citrobacter freundii (8090)	+	-	-

Storage

Store dehydrated medium and prepared medium at 2-8 °C.