

## m-TGE Broth (NCM0266)

### Intended Use

m-TGE Broth is used for the determination of bacterial counts using membrane filtration in a laboratory setting. m-TGE Broth is not intended for use in the diagnosis of disease or other conditions in humans.

### Description

m-TGE is an abbreviation for membrane Tryptone Glucose Extract. In the 1930's, Bower and Hucker developed a medium for detecting bacteria in milk and other dairy products. Prickett used a glucose agar containing tryptone to study thermophilic bacteria in milk. This medium is known as Yeast Dextrose Agar. In 1948, the American Public Health Association (APHA) adopted Tryptone Glucose Extract Agar for use in testing milk and dairy products. Currently, APHA specifies Tryptone Glucose Extract Agar for the heterotrophic plate count procedure in testing bottled water.

m-TGE Broth is a nonselective nutrient medium for the determination of bacterial counts by the membrane filtration method. This broth has the same formulation as Tryptone Glucose Extract Agar, except the agar has been omitted and ingredients are at twice the concentration.

### Typical Formulation

Enzymatic Digest of Casein	10.0 g/L
Beef Extract	6.0 g/L
Dextrose	2.0 g/L

Final pH: 7.0 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### Precaution

Refer to SDS

### Preparation

1. Dissolve 18 g of the medium in one liter of purified water.
2. Mix thoroughly.
3. Autoclave at 121°C for 15 minutes.

### Quality Control Specifications

**Dehydrated Appearance:** Powder is homogeneous, free flowing, and light beige.

**Prepared Appearance:** Prepared medium is clear and yellow to gold.

**Expected Cultural Response:** Cultural response in m-TGE Broth at 35 ± 2°C after 18 - 24 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Response
<i>Bacillus subtilis</i> ATCC® 9372	10 - 300	Growth
<i>Micrococcus luteus</i> ATCC® 9341	10 - 300	Growth
<i>Saccharomyces cerevisiae</i> ATCC® 9763	10 - 300	Growth
<i>Staphylococcus aureus</i> ATCC® 25923	10 - 300	Growth

The organisms listed are the minimum that should be used for quality control testing.

## **Test Procedures**

### **Membrane filtration procedure**

1. Follow the membrane filtration procedure as described in standard methods or by laboratory policy.
2. Incubate the inoculated medium in a humid atmosphere at  $35 \pm 2^{\circ}\text{C}$  for 18 - 24 hours incubation.

## **Results**

Count total colonies and record results.

## **Expiration**

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

## **Limitation of the Procedure**

Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.

## **Storage**

Store dehydrated culture media at  $2\text{-}30^{\circ}\text{C}$  away from direct sunlight. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

## **References**

1. Slanetz, Bent, and Bartley. 1955. Public Health Rep. 70:67.
2. Slanetz, and Bartley. 1957. J. Bacteriol. 74:591.
3. Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.). 2017. Standard methods for the examination of water and wastewater, 23<sup>rd</sup> ed. American Public Health Association, Washington, D.C.