Modified Tryptone-Soy Broth
SKU: 700004622, 700004623, 700004624, 700004625
(NCM0196)

Intended Use
Modified Tryptone-Soy Broth is a selective enrichment broth for *Escherichia coli* serogroup O157 in products intended for human consumption or for animal feeding stuffs, as described in ISO 16654:2001. This medium is not intended for use in the diagnosis of disease or other conditions in humans.

Description
A selective, enrichment broth for *Escherichia coli* O157 in products intended for human consumption or for animal feeding stuffs, as described in ISO 16654:2001. Concern regarding *E. coli* O157:H7 has grown due to the severity of the disease syndromes caused, and the increase in foodborne infection, therefore the need to optimize methods for its efficient isolation has grown. Symptoms start with severe stomach cramps and watery, bloody diarrhea, and a percentage of individuals infected will develop Haemolytic Uraemic Syndrome (HUS) leading to acute renal failure. In a comparison of four different selective broth media, MTSB was the most productive and selective for the isolation of *E. coli* O157:H7. mTSB is made selective for O157:H7 by including bile salts in the dehydrated medium, and the addition of novobiocin supplement (NCM4040). The medium conforms to the performance and formulation requirements of ISO 16654:2001.

Typical Formulation

Enzymatic Digest of Casein	17.0 g/L
Sodium Chloride	5.0 g/L
Dipotassium Hydrogen phosphate	4.0 g/L
D(+)-Glucose	2.5 g/L
Enzymatic Digest of Soy	3.0 g/L
Bile Salts No.3	1.5 g/L

Final pH: 7.4 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Supplements
NCM4040 Novobiocin

Precaution
Refer to SDS

Preparation
1. Dissolve 33 grams of the powder in one liter of purified water.
2. Heat with frequent agitation to completely dissolve the medium if necessary.
3. Autoclave at 121°C for 15 minutes.

Cool to 45-50°C and add 2 vials of NCM4040-0.5* Novobiocin Supplement, each reconstituted using 5mL of sterile deionized/RO water. *Larger vials may be available. Please see appropriate supplement data sheet for availability and preparation instructions.

Test Procedure
For the detection of *Escherichia coli* serogroup O157- Refer to ISO 16654:2001
For the identification of Shiga toxin-producing *Escherichia coli* (STEC)- Refer to ISO 13136:2012

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Quality Control Specifications

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

Prepared Appearance: Prepared medium is a clear, pale yellow liquid.

Expected Cultural Response: Cultural response at 41.5°C ± 1°C after 18-24 hours incubation

Microorganism	Approx. Inoculum (cfu)	Expected results
Escherichia coli NCTC® 12900	10-100	Recovery from 10-100 cfu
Escherichia coli ATCC® 25922	10-100	Recovery from 10-100 cfu
Proteus mirabilis ATCC® 29906	$>10^3$	Suppressed growth
Staphylococcus aureus ATCC® 25923	$>10^4$	Inhibited

The organisms listed are the minimum that should be used for Quality Control testing.

Results

Turbidity in the broth indicates growth. All broths should be sub-cultured to selective media whether turbid or not.

Expiration

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

Limitations of the Procedures

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

Storage

Store dehydrated culture media at 2-30°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. ISO 16654:2001 Microbiology of food and animal feeding stuffs – Horizontal method for the detection of *Escherichia coli O157*
2. ISO 13136:2012 Microbiology of food and animal feed - Real-time polymerase chain reaction (PCR)-based method for the detection of foodborne pathogens - Horizontal method for the detection of Shiga toxin-producing Escherichia coli (STEC) and the determination of O157, O111, O26, O103 and O145 serogroups

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