

TERRIFIC BROTH, MODIFIED (7708)

Intended Use

Terrific Broth, Modified is used with glycerol in cultivating recombinant strains of *Escherichia coli*.

Product Summary and Explanation

Terrific Broth, Modified was developed by Tartoff and Hobbs¹ to increase yields of plasmid DNA from transformed *E. coli*. Terrific Broth, Modified is a popular choice of media available for plasmid preps. While cells grown in Terrific Broth, Modified can grow slower than other liquid media, the final cell density and plasmid yields are 2 – 4 fold higher. The higher yield is a result of the increased concentration of Enzymatic Digest of Casein and Yeast Extract in this formula. Glycerol is used as a carbohydrate source, and unlike glucose, is not fermented to acetic acid.

Principles of the Procedure

The nutritious base of Terrific Broth, Modified is provided by Enzymatic Digest of Casein and Yeast Extract. Enzymatic Digest of Casein and Yeast Extract supply nitrogen, vitamins, and essential cofactors for increased growth of recombinant strains of *E. coli*. The high concentration of Yeast Extract results in elevated plasmid yields. Potassium Phosphates are added as buffers to prevent cell death due to a drop in pH. Glycerol is added as a supplement, and serves as a carbon and energy source.

Formula / Liter

Yeast Extract.....	24 g
Enzymatic Digest of Casein	12 g
Dipotassium Phosphate	9.4 g
Monopotassium Phosphate	2.2 g
Final pH: 7.2 ± 0.2 at 25°C	

Supplement

Glycerol, 8 mL

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

Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Dissolve 47.6 g of the medium in one liter of purified water containing 8 mL of glycerol.
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 to trace hazy and light to medium amber, with none to light precipitate.

Expected Cultural Response: Cultural response in Terrific Broth, Modified at 35 ± 2°C and examined for growth after 18 - 24 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Expected Results
<i>Bacillus subtilis</i> ATCC® 6051	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 25922	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 23724	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 33694	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 33849	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 39403	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 47014	10 - 300	Growth
<i>Escherichia coli</i> ATCC® 53868	10 - 300	Growth

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

Test Procedure

Consult appropriate references for recommended test procedures.^{1,2}

Results

After sufficient incubation, growth is exhibited as turbidity in the medium.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. 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.

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

Packaging

Terrific Broth, Modified	Code No.	7708A	500 g
		7708B	2 kg
		7708C	10 kg

References

1. **Tartoff, K. D., and C. A. Hobbs.** 1987. Improved media for growing plasmid and cosmid clones. Bethesda Research Laboratories Focus **9:12**.
2. **Sambrook, J., E. F. Fritsch, and T. Maniatis.** 1989. Molecular cloning: a laboratory manual, 2nd ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, N. Y.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.