



D/E NEUTRALIZING BROTH w/TWEEN (7705)

Intended Use

D/E Neutralizing Broth w/Tween is used for testing and neutralizing of antiseptics and disinfectants.

Product Summary and Explanation

D/E Neutralizing Broth was developed by Dey and Engley to neutralize a broad spectrum of disinfectants and preservative antimicrobial chemicals,¹ including quaternary ammonium compounds, phenolics, iodine, chlorine preparations, mercurials, formaldehyde, and glutaraldehyde. D/E Neutralizing media neutralize higher concentrations of residual antimicrobials when compared with other standard neutralizing formulations, such as Lethen media, Thioglycollate media, and Neutralizing Buffer.^{2,3}

Total neutralization of disinfectants is critical. Disinfectant residues can result in a false-negative (no-growth) test. D/E Neutralizing Broth w/Tween effectively neutralizes the inhibitor action of disinfectant carryover,^{4,5} allowing differentiation between bacteriostasis and the true bactericidal action of disinfectant chemicals. This is a critical characteristic to consider when evaluating a disinfectant. D/E Neutralizing Broth w/Tween is recommended for use in disinfectant evaluations, environmental sampling (swab and contact plate methods), and testing of water-miscible cosmetics.⁶

Principles of the Procedure

Enzymatic Digest of Casein and Yeast Extract provide nitrogen, carbon, vitamins, and minerals in D/E Neutralizing Broth w/Tween. Dextrose is a source of fermentable carbohydrate. Sodium Thioglycollate neutralizes mercurials. Sodium Thiosulfate neutralizes iodine and chlorine. Sodium Bisulfite neutralizes formaldehyde and glutaraldehyde. Lecithin neutralizes quaternary ammonium compounds and Polysorbate 80 neutralizes phenols, hexachlorophene, formalin, and, with Lecithin, ethanol. Bromcresol Purple is used as a colorimetric indicator to demonstrate the production of acid from the fermentation of dextrose.

Formula / Liter

Dextrose.....	10 g
Lecithin.....	7 g
Sodium Thiosulfate	6 g
Polysorbate 80	5 g
Enzymatic Digest of Casein	5 g
Yeast Extract.....	2.5 g
Sodium Bisulfite	2.5 g
Sodium Thioglycollate.....	1 g
Bromcresol Purple	0.02 g

Final pH: 7.6 ± 0.2 at 25°C

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

Precautions

1. For Laboratory Use.
2. HARMFUL. Harmful if swallowed, inhaled, or absorbed through the skin. May cause allergic respiratory reaction. Irritating to eyes, respiratory system, and skin.

Directions

1. Dissolve 39 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, may form soft lumps, and bluish-gray to green.

Prepared Appearance: Prepared medium is opaque, may appear flocculent upon sitting, and lavender to bluish-purple.

Expected Cultural Response: Cultural response in D/E Neutralizing Broth w/Tween incubated aerobically at 35 ± 2 °C and examined for growth after 18 - 48 hours.

Microorganism	Approx. Inoculum (CFU)	Expected Results
<i>Pseudomonas aeruginosa</i> ATCC® 27853	100 -1000	Growth
<i>Bacillus subtilis</i> ATCC® 9372	100 -1000	Growth
<i>Escherichia coli</i> ATCC® 25922	100 -1000	Growth
<i>Staphylococcus aureus</i> ATCC® 25923	100 -1000	Growth
<i>Salmonella typhimurium</i> ATCC® 14028	100 -1000	Growth

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

Test Procedure

D/E Neutralizing Broth w/Tween is used in a variety of procedures. Consult appropriate references for complete information.⁶

Results

Refer to appropriate references and procedures for results.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 8°C. Once opened and recapped, place the 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

D/E Neutralizing Broth w/Tween	Code No.	7705A	500 g
		7705B	2 kg
		7705C	10 kg

References

1. Engley, F. B., Jr. and B. P. Dey. 1970. A universal neutralizing medium for antimicrobial chemicals. Presented at the Chemical Specialties Manufacturing Association (CSMA) Proceedings. 56th Mid-Year Meeting.
2. Dey, B. P., and F. B. Engley, Jr. 1983. Methodology for recovery of chemically treated *Staphylococcus aureus* with neutralizing medium. Appl. Environ. Microbiol. **45**:1533-1537.
3. Dey, B. P., and F. B. Engley, Jr. 1978. Environmental sampling devices for neutralization of disinfectants. Presented at the 4th International Symposium on Contamination Control.
4. Dey, B. P., and F. B. Engley, Jr. 1994. Neutralization of antimicrobial chemicals by recovery media. J. Microbiol. Methods. **19**:51-58.
5. Dey, B. P., and F. B. Engley, Jr. 1995. Comparison of Dey and Engley (D/E) Neutralizing Medium to Lethen Medium and Standard Methods Medium for recovery of *Staphylococcus aureus* from sanitized surfaces. J. Ind. Microbiol. **14**:21-25.
6. Curry, A. S., J. G. Graf, and G. N. McEwen, Jr. (eds.). 1993. CTFA Microbiology Guidelines. The Cosmetic, Toiletry and Fragrance Association, Washington, D.C.

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.