D/E NEUTRALIZING BROTH (7562)

Intended Use

D/E Neutralizing Broth 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 Letheen 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 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 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. Dextrose is a source of fermentable carbohydrate. Sodium Thioglycollate neutralizes mercurials. Sodium Thiosulfate neutralizes iodine and chlorine. Sodium Bisulfite neutralizes formaldehyde and gluteraldehyde. 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	
Enzymatic Digest of Casein	5 g
Yeast Extract	2.5 g
Dextrose	10 g
Sodium Thioglycollate	1 g
Sodium Thiosulfate	6 g
Sodium Bisulfite	2.5 g
Lecithin	7 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.

Supplement / Liter

Polysorbate 80.....5 g

Precautions

1. For Laboratory Use.
2. HARMFUL. Irritating to eyes, respiratory system, and skin. May cause sensitization by inhalation.

Directions

1. Dissolve 34 g of the medium and 5 g of Polysorbate 80 in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.

Quality Control Specifications

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

Prepared Appearance: Prepared medium is purple, opaque.

Expected Cultural Response: Cultural response in D/E Neutralizing Broth at 35°C after 40 - 48 hours incubation.

Microorganism	Response
Escherichia coli ATCC® 11775	growth
Salmonella typhi ATCC® 19430	growth
Salmonella typhimurium ATCC® 14028	growth
Shigella flexneri ATCC® 12022	growth
Shigella sonnei ATCC® 25931	growth

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

Test Procedure

D/E Neutralizing Broth 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 - 30°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	**Code No.**	**7562A**	**500 g**
		7562B	**2 kg**
		7562C	**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 Letheen 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 (410)780-5120 or fax us at (410)780-5470.