



PRODUCT SPECIFICATION SHEET

Dey-Engley (D/E) Neutralizing Broth (without Bromo Cresol Purple) (DM792U)

Intended Use

Dey-Engley (D/E) Neutralizing Broth (without Bromo Cresol Purple) (DM792U) is recommended for disinfectant testing, where neutralization of antiseptics and disinfectants is important for determining its bactericidal activity in compliance with USP.

Product Summary and Explanation

Dey-Engley Neutralizing Broth is formulated as per the procedure described by Engley and Dey to neutralize a broad spectrum of disinfectants and preservative antimicrobial chemicals.⁽¹⁾ A strongly bacteriostatic substance inhibits the growth and reproduction of bacteria without killing them. These bacteria hold the ability to cause infection under favourable conditions. D/E Neutralizing media neutralizes higher concentrations of residual antimicrobials as compared with other standard neutralizing formulations, such as Lethen media, Thioglycollate media, and Neutralizing Buffer.^(2,3) Complete neutralization of disinfectants is crucial and disinfectant residues can result in a false negative (no-growth) test. Dey-Engley (D/E) Neutralizing Broth (without Bromo cresol purple) is formulated as per United States Pharmacopoeia.⁽⁴⁾

Principles of the Procedure

Dey-Engley (D/E) Neutralizing Broth (without Bromo Cresol Purple) contains tryptone which provides essential nutrients for metabolism of organisms. Dextrose is an energy and carbon source. Yeast extract is also a rich source of vitamin B-complex. The present formulation incorporates neutralizing substances for almost all the active products used as antiseptics and disinfectants. Sodium bisulfite neutralizes aldehydes; sodium thioglycollate neutralizes mercurials; sodium thiosulfate neutralizes iodine and chlorine,⁽¹⁾ lecithin neutralizes quaternary ammonium compounds; and polysorbate 80, a non-ionic surface-active agent, neutralizes substituted phenolics.⁽⁵⁻⁸⁾

Formula / Liter

Ingredients	Gms / Liter
Tryptone	5.00
Yeast extract	2.50
Dextrose	10.00
Sodium thiosulphate	6.00
Sodium thioglycollate	1.00
Sodium bisulphite	2.50
Lecithin	7.00
Polysorbate 80	5.00
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 only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 39 grams of the medium in one liter of distilled water.
2. Heat if necessary to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.





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Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light yellow coloured opalescent solution
Reaction of 3.9% Solution	pH : 7.6 ± 0.2 at 25°C
Gel Strength	Not Applicable

Growth Promotion Test

As per United States Pharmacopoeia.

Expected Cultural Response: Cultural characteristics observed after an incubation at i) For bacteria at 30-35°C for <=3 days i) For fungi at 20-25°C for <=5days.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Bacillus subtilis</i> ATCC 6633	50 -100	good-luxuriant
2.	<i>Pseudomonas aeruginosa</i> ATCC 27853	50 -100	good-luxuriant
3.	<i>Salmonella Typhimurium</i> ATCC 14028	50 -100	good-luxuriant
4.	<i>Escherichia coli</i> ATCC 8739	50 -100	good-luxuriant
5.	<i>Staphylococcus aureus</i> ATCC 6538	50 -100	good-luxuriant
6.	<i>Aspergillus brasiliensis</i> ATCC 16404	50 -100	good-luxuriant
7.	<i>Candida albicans</i> ATCC 10231	50 -100	good-luxuriant

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

Test Procedure

Neutralization Test

1. Prepare two sets of test tubes, one containing 9 ml Dey-Engley Neutralizing Broth (DM792U) and other with 9 ml Dey-Engley Neutralizing Broth Base (DM790), for testing disinfectants.
2. Add 1 ml of disinfectant under test. Mix well and allow it to stand for 15 minutes.
3. Inoculate 0.1 ml of 1:100,000 dilution of overnight broth cultures and incubate at 37°C for 48 hours.
4. To check bactericidal activity, both broth tubes are inoculated on D/E Neutralizing Agar (DM791).
5. Refer to appropriate references for standard test procedures.

Results

1. Growth in Neutralizing Broth and no growth in Neutralizing Broth Base indicate neutralization of disinfectant.
2. Positive growth from negative tubes of Neutralizing Broth Base indicates bacteriostatic substance while negative growth indicates a bactericidal disinfectant.
3. All positive tubes should show growth on Dey-Engley Neutralizing Agar. The control disinfectants used in test procedure are 2% chlorine, 2% formaldehyde, 1% glutaraldehyde, 2% iodine, 2% phenol, 1/750 quaternary ammonium compounds, 1/1000 mercurials etc.
4. Refer to appropriate references and test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

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





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Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Dey-Engley (D/E) Neutralizing Broth (without Bromo Cresol Purple)

Product Code : DM792U

Available Pack sizes : 500gm

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. The United States Pharmacopoeia 2011, The US Pharmacopoeial Convention Inc., Rockville, MD.
5. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed. American Public Health Association, Washington, D.C.
6. Quisno R.A., Gibby I.W., and Foter M.J., 1946, Am. J. Phar., 118:320.
7. Erlandson A. L., and Lawrence C. A., 1953, Science 118:274.
8. Brummer B., 1976, Appl. Environ. Microbiol., 32:80.

Further Information

For further information please contact your local MICROMASTER Representative.



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