42571 Dey-Engley Neutralizing Agar (D/E Neutralizing Agar; D/E Agar Disinfectant Testing)

Dey-Engley Neutralizing Agar is used in disinfectant testing where neutralization of the antiseptics and disinfectants is important for determining its bactericidal activity.

Composition:

Ingredients	Grams/Litre
Casein Enzymic Hydrolysate	5.0
Yeast Extract	2.5
Dextrose	10.0
Sodium Thiosulphate	6.0
Sodium Thioglycollate	1.0
Sodium Bisulphite	2.5
Lecithin	7.0
Polysorbate 80	5.0
Bromo Cresol Purple	0.02
Agar	15.0
Final pH 7.6 +/- 0.2 at 25°C	

Store prepared media at 2-8°C, protected from direct light. Store dehydrated powder in a dry place in tightly-sealed containers at 10-30°C.

Appearance: Bluish, grey colored, homogeneous, free flowing powder.
Gelling: Firm
Color and Clarity: Purple colored, clear to slightly opalescent gel forms in petri plates.

Directions:
Suspend 54.02 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Technique:

Contact plate method:
For Agar Medium: Dey -Engley Neutralizing Agar medium can be over-filled, producing a meniscus or dome-shaped surface that can be pressed onto a surface for sampling its microbial burden. Incubate the plates, by covering the lids, at an appropriate temperature. The presence of microorganism is determined by the appearance of colonies on the surface of agar medium.

Neutrlisation Test

1. For testing disinfectants, prepare two sets of test tubes, one containing 9 ml of Dey-Engley Neutralizing Broth and the other containing 9 ml of Dey-Engley Neutralizing Broth Base.
2. Add 1 ml of disinfectant to each tube.
3. Mix well and allow it to stand for 15 minutes.
4. Inoculate 0.1 ml of a 1:100,000 dilution of overnight broth cultures and incubate at 37°C for 48 hours.
5. Growth is indicated by a color change from purple to yellow.
6. Growth in the Dey-Engley Neutralizing Broth and no growth in the Dey-Engley Neutralizing Broth Base indicates the neutralization of disinfectant.
7. To check bactericidal activity, both broth tubes are inoculated on.
8. Positive growth from negative tubes of Neutralizing Broth Base indicates a bacteriostatic substance, while negative growth indicates a bactericidal disinfectant.

9. To check bactericidal activity, Neutralizing Broth and Neutralizing Broth Base tubes are inoculated on D/E Neutralizing Agar.
10. Positive growth on the plate from negative tubes of Neutralizing Broth Base indicates bacteriostatic substance while negative growth indicates a bactericidal disinfectant. 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.

Dey-Engley Neutralizing Broth Base	g/l
Casein enzymatic hydrolysate	5.0
Yeast extract	2.5
Dextrose	10.0
Bromocresol purple	0.02

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Sodium bisulfite	2.5
Lecithin	7.0
Polysorbate 80	5.0
Bromocresol purple	0.02

Principle and Interpretation:
The Dey-Engley Neutralizing Broth neutralizes a broad spectrum of antiseptics and disinfectants including, quaternary ammonium compounds, phenolics, iodine, chlorine, mercurials, formaldehyde and glutaraldehyde. Sodium thioglycollate, sodium thiosulphate, sodium bisulphite, soya lecithin and polysorbate 80 act as neutralizing components. Growth is indicated by a color change from purple to yellow.

Cultural characteristics after 40-48 hours at 35-37°C.

Organisms (ATCC)	Growth
Bacillus subtilis (6633)	+++
Escherichia coli (25922)	+++
Pseudomonas aeruginosa (27853)	+++
Salmonella typhimurium (14028)	+++
Staphylococcus aureus (25923)	+++

References:

1. Engley and Dey, 1970. Chem. Spec. Manuf. Assoc. Proc., Mid-Year Meet., p. 100 (1970)
2. F. P. Downes, K. Ito, (Ed.), Compendium of Methods for the Microbiological Examination of Foods, 4th Ed. American Public Health Association, Washington, D.C. (2001)
3. R.A. Quisno, I.W. Gibby, M.J. Foter, Am. J. Phar., 118:320 (1946)
4. A.L. Erlandson, C.A. Lawrence, Science 118:274 (1953)
5. B. Brummer, Appl. Environ. Microbiol., 32:80 (1976)

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.