



Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Dey-Engley Neutralizing Broth

Product Code: DM 2062

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

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Yeast extract	2.500
Dextrose	10.000
Sodium thioglycollate	1.000
Sodium thiosulphate	6.000
Sodium bisulphate	2.500
Lecithin	7.000
Polysorbate 80	5.000
Bromocresol purple	0.020
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

The Dey-Engley Neutralizing Broth neutralizes broad spectrum antiseptics and disinfectants including quaternary ammonium compounds, phenolics, iodine and chlorine preparations, mercurials, formaldehyde and glutaraldehyde. This medium is used for the neutralization and testing of antiseptics and disinfectants according to the procedure of Engley and Dey ⁽¹⁾ who formulated this media. 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. Dey-Engley Neutralizing Broth Base and Dey-Engley Neutralizing Broth has the same formula but the former does not containing the neutralizing components. Casein enzymic hydrolysate provides essential nutrients. Dextrose is an energy source. Yeast extract is also a rich source of vitamin B-complex ⁽¹⁾ lecithin neutralizes quaternary ammonium compounds; and polysorbate 80, a non-ionic surface-active agent, neutralizes substituted phenolics ⁽²⁻⁵⁾. Bromocresol purple is an indicator for dextrose utilization. Due to the high concentration of lecithin in the broth medium, turbidity cannot be used to detect growth. Therefore, bromocresol purple and dextrose are added to the medium. Those organisms that ferment dextrose will turn the medium from purple to yellow. Growth of *Pseudomonas* species, which do not ferment dextrose, can be detected by the formation of a pellicle on the surface of the broth ⁽¹⁾.

Neutralization Test:

For testing disinfectants, prepare two sets of test tubes, one containing 9 ml Dey-Engley Neutralizing Broth (DM2062) and other with 9 ml Dey-Engley Neutralizing Broth Base (DM1187). Add 1 ml of disinfectant under test. Mix well and allow it to stand for 15 minutes. Inoculate 0.1 ml of 1:100,000 dilution of overnight broth cultures and incubate at 37°C for 48 hours. Growth is indicated by a colour change from purple to yellow or pellicle formation. Growth in Neutralizing Broth and no growth in Neutralizing Broth Base indicate neutralization of disinfectant. To check bactericidal activity, both broth tubes are inoculated on D/E Neutralizing Agar (DM1186). Positive growth 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.

Methodology

Suspend 39.02 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.



Quality Control

Physical Appearance

Light yellow to bluish grey homogeneous free flowing powder

Colour and Clarity of prepared medium

Purple coloured, opalescent solution in tubes

Reaction

Reaction of 3.9% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH range

7.40-7.80

Cultural Response/Characteristics

DM2062: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth
<i>Bacillus subtilis</i> ATCC 6633	50-100	luxuriant
<i>Escherichia coli</i> ATCC 25922	50-100	Luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	Luxuriant
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	50-100	Luxuriant
<i>Escherichia coli</i> ATCC 8739	50-100	Luxuriant
<i>Staphylococcus aureus</i> ATCC 6538	50-100	luxuriant

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8^o in sealable plastic bags for 2-5 days.

Further Reading

1. Engley and Dey, 1970. Chem. Spec. Manuf. Assoc. Proc., Mid-Year Meet., p. 100.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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