Technical Data

Dey Engley Neutralizing Broth

LQ162CC

Intended Use:

Recommended for neutralizing and determining bactericidal activity of quaternary ammonium compounds.

Composition**

Ingredients	g/ L
Tryptone	5.000
Yeast extract	2.500
Dextrose (Glucose)	10.000
Sodium thioglycollate	1.000
Sodium thiosulphate	6.000
Sodium bisulphite	2.500
Lecithin	7.000
Polysorbate 80 (Tween 80)	5.000
Bromocresol purple	0.020
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Label the ready to use LQ162CC bottle. Inoculate the sample and Incubate at specified temperature and time.

Principle And Interpretation

Dey-Engley Neutralizing Broth is formulated as per the procedure described by Engley and Dey (1). Dey-Engley Neutralizing Broth is especially suited for environmental sampling where neutralization of the chemical is important to determine its bactericidal activity. 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. The Dey-Engley Neutralizing Broth neutralizes a broad spectrum of antiseptics and disinfectants including quaternary ammonium compounds, phenolics, iodine and chlorine preparations, mercurials, formaldehyde and glutaraldehyde. Dey-Engley Neutralizing Broth is used for the neutralization and testing of antiseptics and disinfectants according to the procedure of Engley and Dey (1).

Tryptone provides nitrogen and carbon source, long chain amino acids, vitamins and other essential nutrients. Dextrose is an energy source. Yeast extract is also a rich source of vitamin B-complex. The present formulation incorporate 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. 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).

Type of specimen

Food and dairy samples; Environmental samples, cosmetic, Pharmaceutical.

Specimen Collection and Handling:

Neutralization Test

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 indicate neutralization of disinfectant.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 (SP186). 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.

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1.Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2.Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Sterile clear Dey Engley Neutralizing Broth in glass bottle.

Colour

Purple to reddish purple coloured, opalescent solution (may have particulate precipitate)

Quantity of Medium

200 ml of medium in glass bottle.

pH

7.40-7.80

Sterility Check

Passes release criteria

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 40-48 hours.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant
Escherichia coli ATCC 8739 (00012*)	50-100	luxuriant
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	luxuriant
^*Pseudomonas paraeruginosa* ATCC 9027 (00026*)	50-100	luxuriant
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	luxuriant
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50-100	luxuriant
Staphylococcus aureus subsp. aureus ATCC 6538 (00032*)	50-100	luxuriant
**Bacillus spizizenniii* ATCC 6633 (00003*)	50-100	luxuriant
Candida albicans ATCC 10231 (00054*)	50-100	luxuriant
#*Aspergillus brasiliensis* ATCC 16404 (00053*)	50-100	luxuriant

Key: (*) Corresponding WDCM numbers ^ Formerly known as *Pseudomonas aeruginosa*

**Formerly known as *Bacillus subtilis* subsp. *spizizenii* # Formerly known as *Aspergillus niger*

Storage and Shelf Life

On receipt store between 15-30°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

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

2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

3. Jorgensen,J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Revision : 00/2024