

Lethen Broth, Modified with Tween 80

LQ133D

For screening cosmetic products for microbial contamination

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	20.000
Casein enzymic hydrolysate	5.000
Beef extract	5.000
Yeast extract	2.000
Sodium chloride	5.000
Sodium bisulphite	0.100
Lecithin	0.700
Polysorbate 80	50.000

**Formula adjusted, standardized to suit performance parameters

Directions

Label the ready to use LQ133D bottle. Inoculate the sample and Incubate at appropriate condition

Principle And Interpretation

Lethen Broth, modified is prepared as per FDA (1) for screening cosmetics products for microbial contamination. There are great chances of altering the chemical composition of cosmetics by the metabolism of organisms thereby spoiling and causing harm to the users (2,3,4). Direct colony counts and enrichment culturing are the methods of choice for isolating microorganisms from cosmetics products. The word Lethen represents a combination of lecithin and polysorbate (tween) 80.

Peptic digest of animal tissue, casein enzymic hydrolysate, beef extract and yeast extract provide nitrogenous nutrients, carbon compounds and trace elements to the microorganisms. Incorporation of lecithin and polysorbate 80 to the medium enables the recovery of bacteria from materials containing residues of disinfectant compounds or preservatives used in cosmetics. Polysorbate 80 is added to nullify phenolic compounds, hexachlorophene, formalin and along with lecithin neutralizes ethyl alcohol (5). Lecithin also neutralizes quaternary ammonium compounds present in the cosmetics. Sodium chloride maintains the osmotic balance of the medium.

Enrichment in this medium should be done for 7 days at 30-32°C and then subcultured on Lethen Agar, Modified (M946) and/or MacConkey Agar (M081).

Quality Control

Appearance

Sterile clear Lethen Broth, Modified with Tween 80 in bottles.

Colour

Light yellow coloured clear solution

Quantity of Medium

500 ml of medium in bottles.

Reaction

6.80- 7.20

Cultural response

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

Sterility test

Passes release criteria

Cultural response

Organism	Inoculum (CFU)	Growth
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	50-100	luxuriant
<i>Staphylococcus aureus</i> ATCC 6538	50-100	good-luxuriant

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label.

Reference

1. Bacteriological Analytical Manual, 1995, Food and Drug Administration, 8th Ed., AOAC International, Gaithersburg, MD, U.S.A.
2. Dunningan A. P., 1968, Drug Cosmet. Ind., 102:43.
3. Smart R. and Spooner D. F., 1972, J. Soc. Cosmet. Chem., 23:721.
4. Wilson L. A. and Ahearn D. G., 1977, Am. J. Ophthalmol., 84:112.
5. Favero (Chm.), 1967, A State of the Art Report, Biological Contamination Control Committee, American Association for Contamination Control.

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