

Tergitol-7 HiVeg™ Broth

MV851

Intended Use:

Recommended as selective and differential medium for detection and enumeration of coliforms.

Composition**

Ingredients	g / L
HiVeg™ peptone No. 3	5.000
Yeast extract	3.000
Lactose	10.000
Tergitol 7 (Sodium heptadecyl sulphate)	0.100
Bromo thymol blue	0.025
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 18.13 grams in 1000 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add 3 ml of 1% 2,3,5, Triphenyl Tetrazolium Chloride (TTC) Solution (FD057), if desired. Mix well and dispense into sterile tubes or flasks as desired.

Principle And Interpretation

Tergitol-7 Broth was originally designed by Chapman (1) and later on modified by incorporating 2,3,5-Triphenyl Tetrazolium Chloride (TTC) into the medium. This medium is selective and differential which is used for the detection and enumeration of coliform organisms. Pollard (2) has reported the selective bactericidal property of sodium heptadecyl sulphate (Tergitol-7). Kulp et al (3) corroborated the use of Tergitol-7 medium with TTC in routine analysis of water and Mossel (4) used this medium for the examination of food materials. Tergitol-7 HiVeg™ Broth is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks.

Sodium heptadecyl sulphate (Tergitol-7) inhibits gram-positive bacteria and *Proteus* swarming and yields better recovery of coliforms. Bromo thymol blue is the pH indicator. Lactose fermenting organisms form yellow coloured medium while *Klebsiella* and *Enterobacter* form greenish yellow coloured medium. Lactose non-fermenters produce blue coloured medium. TTC is reduced in the bacterial cell to form formazan, a red coloured insoluble complex, thereby producing red coloured medium.

Type of specimen

Water samples

Specimen Collection and Handling:

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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

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

Cream to light green homogeneous free flowing powder

Colour and Clarity of prepared medium

Green coloured clear to slightly opalescent solution in tubes.

Reaction

Reaction of 1.81% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH

6.70-7.10

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours, if desired with added TTC Solution 1% (FD057).

Organism	Inoculum (CFU)	Growth	Colour of medium
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	luxuriant	yellow
<i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	50-100	luxuriant	yellow
<i>Proteus vulgaris</i> ATCC 13315	50-100	good	blue-green
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	good	blue-green
<i>Salmonella</i> Typhimurium ATCC 14028 (00031*)	50-100	luxuriant	blue-green
<i>Shigella flexneri</i> ATCC 12022 (00126*)	50-100	luxuriant	blue-green
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ⁴	inhibited	-

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. 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 (5,6).

Reference

1. Chapman G.H., 1947, J. Bact., 53:504.
2. Pollard A.L., 1946, Science, 103:758.
3. Kulp W., Mascoli C. and Tavshanjian O., 1953, Am. J. Public Health, 43:1111.
4. Mossel D.A.A., 1962, J. Appl. Bact., 25:20.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. 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.

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