

Diluent TSB with Cap 4

LQ506

Diluent TSB with Cap 4 can be used for the detection and enumeration of microorganisms for products of sanitary importance, water miscible cosmetics, water insoluble products fatty products containing antimicrobials or preservatives.

Composition**

Ingredients	Gms / Litre
Pancreatic digest of casein	17.000
Papaic digest of soyabean meal	3.000
Sodium chloride	5.000
Dextrose	2.500
Dibasic potassium phosphate	2.500
Cap 4 /100 ml	25.000ml
Lecithin	2.000
Peptone	1.000
Tween 80	14.000
Tamol	3.000
Distilled water	75.000ml

**Formula adjusted, standardized to suit performance parameters

Directions

Each tube contains 9ml of TSB medium w/ 25% Cap 4. Add 1 ml of the sample to obtain a 10-fold dilution of the initial sample. Further serial dilutions can be carried out as desired.

Principle And Interpretation

Tryptone Soya Broth is recommended by various pharmacopeias as a sterility testing and as a microbial limit testing medium (1, 2, 3). This medium is a highly nutritious medium used for cultivation of a wide variety of organisms (4).

The combination of pancreatic digest of casein and papaic digest of soyabean meal makes the medium nutritious by providing amino acids and long chain peptides for the growth of microorganisms. Dextrose and dibasic potassium phosphate serve as the carbohydrate source and the buffer, respectively in the medium. Sodium chloride maintains the osmotic balance of the medium.

Cap 4 added to the medium is a mixture of dispersant and neutralizers that are reported to disperse the hydrophobic copolymer and to inactivate residual disinfectants in the sample(5).

This medium can thus be used for detection and enumeration of microbial counts in a wide variety of samples.

Quality Control

Appearance

Sterile clear TSB + Cap 4 medium in glass tubes.

Colour

Dark amber coloured, clear solution.

Quantity of Medium

9 ml of medium in glass tubes.

pH

7.10- 7.50

Sterility test

Passes release criteria

Growth Promotion Test

Growth Promotion is carried out in accordance with the harmonized method of USP/EP/BP/JP.

Stability test

Light yellow coloured clear solution without any precipitation or sedimentation at room temperature for 7 days

Growth promoting properties

Clearly visible growth of microorganism comparable to that previously obtained with previously tested and approved lot of medium occurs at the specified temperature for not more than the shortest period of time specified inoculating ≤ 100 cfu (at 30-35°C for 18-24 hours for bacteria and 5 days for fungal).

Sterility Testing + Validation

The medium is tested with suitable strains of microorganisms inoculating ≤ 100 cfu and incubating at 20-25°C for not more than 3 days in case of bacteria and not more than 5 days in case of fungi.

Cultural response

Cultural characteristics observed after an incubation at specified temperature and time.

Organism	Inoculum	Growth	Incubation temperature	Incubation period
Growth promoting	(CFU)			
<i>Escherichia coli</i> ATCC 8739	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Escherichia coli</i> ATCC 25922	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Staphylococcus aureus</i> ATCC 6538	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Staphylococcus aureus</i> ATCC 25923	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Escherichia coli</i> NCTC 9002	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Pseudomonas aeruginosa</i> ATCC 9027	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Pseudomonas aeruginosa</i> ATCC 27853	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Bacillus subtilis</i> ATCC 6633	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Micrococcus luteus</i> ATCC 9341	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Salmonella Typhimurium</i> ATCC 14028	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Salmonella Abony</i> NCTC 6017	50 -100	luxuriant	30 -35 °C	18 -24 hrs
<i>Streptococcus pneumoniae</i> ATCC 6305	50 -100	luxuriant	30 -35 °C	18 -24 hrs

Sterility Testing - Growth promotion+Validation

<i>Pseudomonas aeruginosa</i> ATCC 27853	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Bacillus subtilis</i> ATCC 6633	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Salmonella Typhimurium</i> ATCC 14028	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Salmonella Abony</i> NCTC 6017	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Candida albicans</i> ATCC 2091	50 -100	luxuriant	30 -35 °C	≤ 5 d
* <i>Aspergillus brasiliensis</i> ATCC 16404	50 -100	luxuriant	30 -35 °C	≤ 5 d
<i>Staphylococcus aureus</i> ATCC 6538	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Staphylococcus aureus</i> ATCC 25923	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Escherichia</i> ATCC 25922	50 -100	luxuriant	20 -25 °C	≤ 3 d
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<i>Pseudomonas aeruginosa</i> ATCC 9027	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Micrococcus luteus</i> ATCC 9341	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Streptococcus pneumoniae</i> ATCC 6305	50 -100	luxuriant	20 -25 °C	≤ 3 d
<i>Candida albicans</i> ATCC 10231	50 -100	luxuriant	30 -35 °C	≤ 5 d
<i>Escherichia coli</i> ATCC 8739	50 -100	luxuriant	20 -25 °C	≤ 3 d

Storage and Shelf Life

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

Reference

1. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams & Wilkins, Baltimore, M.d.
2. The United States Pharmacopeia, 2008, USP31/NF26, The United States Pharmacopeial Convention, Rockville, MD.
3. Indian Pharmacopeia, 2007, Govt. of India, Ministry of Health and Family Welfare, New Delhi, India.
4. Forbes B. A., Sahm D. F. and Weissfeld A. S., 1998, Bailey & Scotts Diagnostic Microbiology, 10th Ed., Mosby, Inc. St. Louis, Mo.
5. Brummer, 1976, Appl. Environ. Microbiol., 32:80.

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