TTC CHAPMAN AGAR

AGCH-00I-500

- **Principle**

TTC Chapman Agar (Lactose Agar TTC with Tergitol 7) is a selective and differential medium used for the presumptive control of E. coli and coliforms in waters for human consumption by the membrane filtration technique.

Peptone and beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is source of vitamins, particularly the B-group. Lactose is a fermentable carbohydrate providing carbon and energy. Sodium heptadecylic sulphate (Tergitol 7) and TTC inhibit most Gram-positive bacteria. Bromothymol blue is a pH indicator. Bacteriological agar is the solidifying agent.

- **Regulatory compliance**

This product is manufactured under a quality management system in accordance with ISO 9001 and ISO 13485, and its formulation and quality control comply with applicable international standards, such as ISO 11133, where relevant.

- **Composition**

Ingredients	**g/L**
Bromothymol blue	0.05
Beef extract	5.00
Peptone	10.00
Yeast extract	6.00
Bacteriological agar	15.00
Lactose	20.00
Sodium heptadecylic sulphate (Tergitol 7)	0.10

- **Preparation**

Suspend 56.15 grams of the medium in one litre of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 °C for 15 minutes. Cool to 45-50 °C and aseptically add 2.5 ml of TTC 1% Supplement (TTCS-00P-010) to 1 litre of the medium. Homogenize gently and dispense into Petri dishes. DO NOT OVERHEAT.

- **Applications and use**

For the detection and enumeration of Escherichia coli and coliform bacteria in water samples:

- Filter two samples of water over two different membranes and incubate on TTC Chapman Agar at 36±2 °C and 44±4 °C respectively for 21±3 hours.

Typical colonies have the appearance as follow:

- E. coli and *Citrobacter* spp present yellow colonies with orange-coloured centre.

- *Enterobacter* spp forms red-coloured colonies and dark yellow with orange-coloured centre. The medium is yellow.
- *Klebsiella* spp form red-coloured or yellow, but without centre. The medium is yellow.
- Lactose non fermentative bacteria grow with purple colonies and change the medium to blue.

Klebsiella and Enterobacter species can also produce yellow-green colonies.

The results will always refer to counts per 100 ml of sample, considering if it has been necessary to make dilutions.

- Count as lactose-positive bacteria the colonies that present a yellow development of the medium under the membrane.
- Subculture the characteristic colonies obtained, in non-selective agar and Tryptophan Culture Broth.
- Carry out the oxidase test and incubate the tubes of Tryptophan Culture Broth at 44±0.5 °C for 21±3 hours.
- Indole production is determined by adding a few drops of Kovac's Reagent to the incubated Tryptophan Culture Broth tubes. A positive test.

- **Quality control**

Solubility	w/o rests
Appearance	Fine powder
Colour of the dehydrated medium	Greenish beige
Colour of the prepared medium	Green
Final pH (25 °C)	7.2 ± 0.1

- **Microbiological test**

According to ISO 11133:

Incubation conditions: 36±2 °C / 21±3 h.

Inoculation conditions: Productivity quantitative (100±20. Min. 50 CFU) / Selectivity (10^4-10^6 CFU) / Specificity (10^3-10^4 CFU).

Reference media: Media batch TTC Chapman Agar already validated.

Microorganisms	ATCC	Specification	Characteristic reaction
Enterococcus faecalis	19433	Total inhibition (0)	-
Escherichia coli	25922	Good growth >70 %	Yellow in the central part below the membrane
Pseudomonas aeruginosa	27853	Red colonies, blue colour in the medium	-
Escherichia coli	8296 (CECT)	Good growth >70 %	Yellow in the central part below the membrane

- **Storage**

The product is highly hygroscopic; keep the container always closed and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Temp. Min.:2 °C Temp. Max.:25 °C.

Note: Sterilize media immediately after reconstitution.

- **Bibliography**

Chapman G.H. 1946. A single culture medium for selective isolation of plasma coagulating staphylococci and for improved testing of chromogenesis (J. Bacteriol. 51: 409-410)

Tittsler R.P. and L.A. Sandholzer. 1936. The Use of Semi-Solid Agar for the detection of bacteria motility. (J. Bacteriol 31: 575-580)

ISO 9308-1:2000. Water quality. Detection and enumeration of Escherichia coli and coliform bacteria.PART.1. Membrane filtration method

- **Product use limitation**

This product is developed, designed and supplied exclusively for research use only. It is not intended for diagnostic applications or drug development, and it is not suitable for administration to humans or animals.