Chromogenic *Escherichia coli* Agar RDM-CEA-01

Principle

Chromogenic *Escherichia coli* Agar is a selective medium recommended for the single stage detection and enumeration *Escherichia coli* in food and water samples. The CEA media is composed of tryptone, peptone, bile salts, sodium dihydrogen phosphate, disodium hydrogen phosphate, sodium chloride and chromogenic substrate X-gluconoid (5-bromo-4-chloro-3-indoxyl- β-D-glucuronic acid cyclohexamine ammonium salt). Tryptone and peptone are source of nutrients and other essential growth factors for the growth of organisms. The bile salts inhibit the gram-positive microbes. Sodium dihydrogen phosphate, disodium hydrogen phosphate buffers the medium. The enzyme ß-D-glucuronidase produced by *E. coli*, cleaves 5-bromo-4chloro-3-indoxyl-β-D-glucuronic acid and due to that the colonies of *E. coli* appears as dark green to blue colored colonies.

Use: Recommended for detection of and enumeration of *Escherichia coli* form food and water samples.

Contents*

Ingredients	**Gram/Litre**
Tryptone	14.000
Peptone	5.000
Sodium chloride	2.400
Bile Salts	1.500
Disodium hydrogen phosphate	1.000
Sodium dihydrogen phosphate	0.600
X-glucoronide	0.075
Agar	12.000
pH at 25˚C	7.2 ±0.2

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 36.60 grams (the equivalent weight of dehydrated medium per liter) in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121 ℃, at 15 psi for 15 min; cool to 45-50°C. Mix well and distribute aseptically in petri plates and allow to solidify. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Food samples

Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light beige colored, free-flowing, homogeneous
Reaction of 3.66% solution	7.2 ±0.2 at 25ºC
pH	7.00- 7.40
Gelling	Firm comparable with 1.2% agar gel
Color and clarity of ready medium	Light amber, clear opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 35 ± 2ºC for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 35 ± 2ºC for 18-24 h
Negative control	Performed using sterile distilled water

Different Microbial Response

Cultural characteristics observed after an incubation at 44 ± 2ºC for 18-24 hours. Inoculum 50-100 CFU.

Organism	ATCC no.	Growth	Colony color
Escherichia coli	8739	Luxuriant	Bluish-green
Salmonella typhimurium	14028	Luxuriant	Colorless
Staphylococcus aureus	25923	Inhibited	--

Cultural characteristics observed after an incubation at 35 ± 2ºC for 18-24 hours. Inoculum 50-100 CFU.

Organism	ATCC no.	Growth	Colony color
Escherichia coli	8739	Luxuriant	Bluish-green
Salmonella typhimurium	14028	Luxuriant	Colorless

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times 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.
Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and
3. International Organization for Standardization (2014). Water quality: Enumeration of E. coli and coliform bacteria. Part I Membrane filtration methods for bacteria with low bacterial background flora. ISO 9308-1:2014.
4. 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 Wastewater, 23rd Ed., APHA, Washington, D.C.
5. Salfinger, Y., & Tortorello, M. L. Fifth (Ed.), 2015. Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, DC.