

TM 2115 – CHROMOGENIC COLIFORM AGAR (CCA) W/ 1% AGAR (ISO 9308-1:2014)

INTENDED USE

For recommended for detection of total coliforms and *Escherichia coli* in water samples.

PRODUCT SUMMARY AND EXPLANATION

Coliforms including *Escherichia coli* are used as primary indicators of faecal contamination in water and food industries. Their presence and enumeration in samples is used as an index of the presence of faecal matter and is indicative of the possible presence of enteric pathogens. Chromogenic Coliform Agar (CCA) is a fast, accurate, and efficient way to detect coliforms and *E. coli* during microbiological quality testing of water and food samples. *Escherichia coli* are also the most common pathogen in urinary tract infections. This product incorporates the company's chromogenic galactoside that detects clinical levels of coliforms with high sensitivity.

COMPOSITION

Ingredients	Gms / Ltr
Agar	10.000
Sodium Chloride	5.000
Disodium hydrogen phosphate	2.700
Sodium dihydrogen phosphate (2H ₂ O)	2.200
Yeast extract	2.000
Enzymatic digest of casein	1.000
Sodium pyruvate	1.000
Sorbitol	1.000
Tryptophan	1.000
Salmon-β-D-galactoside	0.200
Sodium heptadecyl sulphate (Tergitol 7)	0.150
X-glucuronide	0.100
Isopropyl 1-β-D-thiogalactopyranoside (IPTG)	0.100

PRINCIPLE

CHROMOGENIC COLIFORM AGAR (CCA) is used for enumeration of *Escherichia coli* and other coliforms in water samples by membrane filter technique. This medium contains enzymatic digest of casein, yeast extract, sorbitol and sodium pyruvate as sources of carbon, nitrogen, fermentable carbohydrate and other essential growth nutrients for the growth of microorganisms. Disodium hydrogen phosphate and sodium dihydrogen phosphate are the buffering agents. Sodium chloride maintains the osmotic equilibrium in the medium. L- Tryptophan improves the indole reaction and gives improved differentiation between *Escherichia coli* and other coliforms. Tergitol- 7 inhibits gram positive bacteria. The two chromogens used; salmon-β-D-galactoside and X- glucuronide help in differentiation of *Escherichia coli* and other coliforms on the basis of colony colour. The enzyme β-D-galactosidase cleaves salmon-β-D-galactoside, and gives a salmon to red colour to the coliform bacteria. *E. coli* have β-D galactosidase and β-D-glucuronidase enzymes to cleave both the chromogens, which give blue-violet colour to colonies. Expression of β-D- galactosidase is strengthened in the presence of IPTG. Agar is a gelling agent.

INSTRUCTION FOR USE

- Dissolve 25.92 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml of distilled water.
- Gently heat to boiling with gentle swirling, to dissolve the medium completely (Do not autoclave the medium and avoid overheating).
- Cool to 45-50°C and pour into sterile petri plates.

QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : Cream to yellow homogeneous free flowing powder.
- Appearance of prepared medium** : Light yellow coloured opalescent gel forms in Petri plates.
- pH (at 25°C)** : 6.8 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Color of the colony	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	50-100	Luxuriant	≥ 70%	Dark blue to violet colonies	35-37°C	18 – 24 Hours.
<i>Citrobacter freundii</i>	8090	50-100	Luxuriant	≥ 50%	Pink to red colonies	35-37°C	18 – 24 Hours.
<i>Enterobacter aerogenes</i>	13048	50-100	Luxuriant	≥ 70%	Pink to red colonies	35-37°C	18 – 24 Hours.
<i>Salmonella Enteritidis</i>	13076	50-100	Luxuriant	≥ 50%	Colourless colonies	35-37°C	18 – 24 Hours.
<i>Enterococcus faecalis</i>	29212	≥1000	Inhibited	0%	-	35-37°C	18 – 24 Hours.

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 2-8°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.



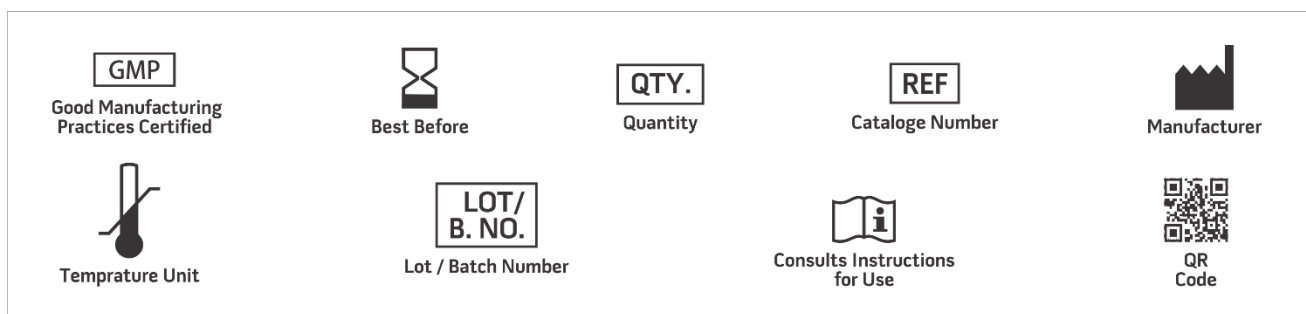
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. ISO 9308-1/2014. Water quality — Enumeration of Escherichia coli and coliform bacteria —Part 1: Membrane filtration method for waters with low bacterial background flora.
2. Frampton, E.W., Restaino, L. and Blaszkowski, N. 1988. J. Food Prot. 51: 402-404.
3. Kilian, M. and Bulow, P. 1979. Acta. Pathol. Microbiol. Scand.(Section B) 87: 271-276.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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