# TM 1338 -CHROMOGENIC COLIFORM AGAR W/SLS

## INTENDED USE

For simultaneous detection of total coliforms and *Escherichia coli* in water and foods.

## PRODUCT SUMMARY AND EXPLANATION

CHROMOGENIC COLIFORM AGAR W/SLS is used for rapid detection of coliforms and *Escherichia coli* during microbiological quality testing of water and food samples. The medium utilizes specific enzymes associated with coliforms and *E.coli* for differentiating the microorganisms.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Agar** | 12.000 |
| **Sodium chloride** | 5.000 |
| **Dipotassium hydrogen phosphate** | 3.000 |
| **Peptone, special** | 3.000 |
| **Potassium dihydrogen phosphate** | 1.700 |
| **Sodium pyruvate** | 1.000 |
| **L-Tryptophan** | 1.000 |
| **Chromogenic mixture** | 0.200 |
| **Sodium lauryl sulphate** | 0.100 |

## PRINCIPLE

Medium contains Peptone special which provides essential nutrients for growth like nitrogen, vitamins, minerals and amino acids. The combined action of Peptone and Sodium pyruvate allow rapid colony growth in this phosphate buffered medium, which also allows easy recovery of sub lethally, thermally injured, Coliforms. Sodium chloride provides the osmotic environment necessary for growth. Agar acts as the solidifying agent and Sodiun lauryl sulphate makes the medium selective by inhibiting gram-positive organisms. The differentiation between Coliforms and *E. coli* is achieved with the presence of Chromogenic mixture Salmon-GAL, a chromogenic substrate for the detection of β-galactosidase and XGLUC, a chromogen substrate for the detection of β- glucuronidase. Salmon-GAL is hydrolysed by coliforms releasing a salmon colour pigment; this reaction is strengthened in the medium by the presence of IPTG (isopropil-β-D-thiogalactopiranoside). X-GLUC is hydrolysed, among Enterobacteria, by *E. coli*, and by a few other strains of *Salmonella* and *Shigella* releasing a blue pigment. However, in the presence of the two substrates, and cleavage of these by *E.coli* results in the formation of dark blue to violet colonies. The presence of Tryptophan in the medium allows testing the indole directly onto the colonies by adding Kovac's Reagent, for the confirmation of *E. coli*.

## INSTRUCTION FOR USE

- Suspend 27.00 grams in 1000 ml distilled water.
- Gently heat to boiling with swirling to dissolve the agar completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool at 40 - 50ºC.
- Mix well and pour into sterile Petri plates.

**Note:** When a high number of gram-positive bacteria are expected add 5mg/liter of Novobiocin antibiotics before autoclaving the medium

## QUALITY CONTROL SPECIFICATIONS

| | | |
|---|---|---|
| **Appearance of powder** | : | Light yellow to beige homogeneous free flowing powder |
| **Appearance of prepared medium** | : | Light yellow, clear to slightly opalescent gel |
| **pH (at 25°C)** | : | 6.8± 0.2 |

## INTERPRETATION

Cultural characteristics observed after incubation. Recovery rate is considered 100% for bacteria growth on Soya Agar.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Recovery | Colour of colony | Indole production | Incubation Temp. | Incubation Period* |
|---|---|---|---|---|---|---|---|---|
| *Escherichia coli* | 25922 | 50-100 | Good-luxuriant | >=50% | Dark blue to violet | Positive reaction | 35-37˚C | 18-24 Hours |
| *Citrobacter freundii* | 8090 | 50-100 | Good-luxuriant | >=50% | salmon to red | Negative reaction | 35-37˚C | 18-24 Hours |
| *Enterobacter cloacae* | 23355 | 50-100 | Good-luxuriant | >=50% | salmon to red | Negative reaction | 35-37˚C | 18-24 Hours |
| *Salmonella enteritidis* | 13076 | 50-100 | Good | 40-50% | Colourless | Negative reaction | 35-37˚C | 18-24 Hours |
| *Klebsiella pneumoniae* | 13883 | 50-100 | Good-luxuriant | >=50% | Light pink | Negative reaction | 35-37˚C | 18-24 Hours |
| *Enterococcus faecalis* | 29212 | ≥1000 | Inhibited | 0% | - | - | 35-37˚C | 18-24 Hours |

Positive reaction = confirmation of red colour around the colony by addition of Kovacs reagent.
*Incubation period 48 hours, if necessary.

## PACKAGING

In pack size of 100gm & 500gm 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.

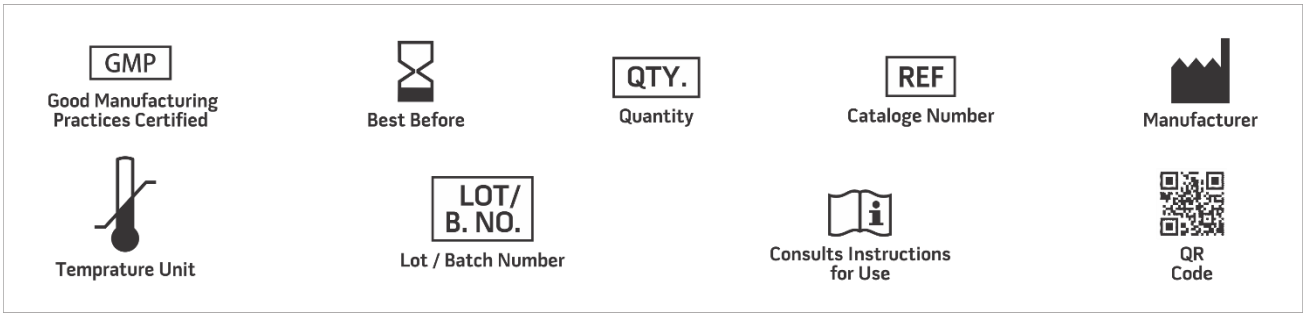
**Product Deterioration:** Do not use if powder show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

## DISPOSAL

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

## REFERENCES

1. Frampton E. W., Restaino L. and Blaszko N., J. Food Prot., 51:402. (1988).
2. LeMinor L. and Hamida F., Ann. Inst. Pasteur (Paris), 102:267. (1962).
3. Manafi M. and Kneifel W., Zentralbl. Hyg., 189:225. (1989).




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

***For Lab Use Only**
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