

## CM 21,255 - MUG MFC AGAR

### INTENDED USE

For cultivation and enumeration of faecal coliforms by the membrane filter technique.

### PRODUCT SUMMARY AND EXPLANATION

Faecal coliforms are organisms present in the gastrointestinal tract of warm blooded animals. Presence of faecal coliforms in water is an indication of faecal contamination. MFC Agar, formulated by Geldrich et al is recommended for the detection of faecal coliforms in water samples by the membrane filter technique. *Escherichia coli* is a member of the faecal coliform group, which possess the enzyme  $\beta$ -glucuronidase. This enzyme specifically cleaves 4-Methylumbelliferyl- $\beta$ -D-Glucuronide (MUG) to form a fluorescent end product 4-Methylumbelliferone. This end product fluoresces under long wave UV light (366 nm). MUG MFC Agar is MFC Agar with added MUG and is recommended for cultivating and enumerating faecal coliforms by the membrane filtration technique.

### COMPOSITION

| Ingredients                                       | Gms / Ltr |
|---------------------------------------------------|-----------|
| Tryptose                                          | 10.000    |
| Proteose peptone                                  | 5.000     |
| Yeast extract                                     | 3.000     |
| Bile salts                                        | 1.500     |
| Sodium chloride                                   | 5.000     |
| 4-Methylumbelliferyl $\beta$ -D-Glucuronide (MUG) | 0.100     |
| Agar                                              | 15.000    |

### PRINCIPLE

Tryptose and proteose peptone provide carbon, nitrogen, vitamins and minerals necessary for the growth of faecal coliforms. Yeast extract provides B-complex vitamins, which stimulate bacterial growth. Bile salts inhibit the growth of gram-positive microorganisms. Incorporation of MUG in the medium permits rapid detection of *E. coli*, when the medium is observed for fluorescence under long-wave UV light.

### INSTRUCTION FOR USE

Dissolve 39.6 grams in 1000 ml distilled water.

Heat to boiling to dissolve the medium completely. Do not autoclave.

Mix well and pour into sterile Petri plates.

### QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.

Appearance of prepared medium : Yellow coloured clear to slightly opalescent gel forms in Petri plates.

pH (at 25°C) : 7.4±0.2

### INTERPRETATION

Cultural characteristics observed after an incubation.



| Microorganism          | ATCC  | Inoculum (CFU/ml) | Growth    | Recovery | Fluorescence (under UV) | Incubation Temperature | Incubation Period |
|------------------------|-------|-------------------|-----------|----------|-------------------------|------------------------|-------------------|
| Escherichia coli       | 25922 | 50-100            | Luxuriant | >=70 %   | Positive                | 35-37°C                | 18-24 Hours       |
| Enterococcus faecalis  | 29212 | >=10 <sup>3</sup> | Inhibited | 0%       | -                       | 35-37°C                | 18-24 Hours       |
| Salmonella Typhimurium | 14028 | 50-100            | Luxuriant | >=70 %   | Negative                | 35-37°C                | 18-24 Hours       |
| Shigella flexneri      | 12022 | 50-100            | Luxuriant | >=70 %   | Negative                | 35-37°C                | 18-24 Hours       |

#### PACKAGING:

Inpacksizeof500 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. Geldreich E. E., Clark H. F., Huff C. B. and Best L. C., 1965, J. Amer. Water Works Assoc. 57:208.
2. Eaton A. D., Clesceri L. S. and Greenberg A. E., (Eds.), 1995, Standard Methods for the Examination of Water and Wastewater, 19th Ed., American Public Health Association, Washington, D.C.

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|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <br>Good Manufacturing<br>Practices Certified | <br>For In Vitro Diagnostic Use | <br>Quantity            | <br>Lot / Batch Number | <br>Catalogue Number                 | <br>Manufacturer |
| <br>Temperature Unit                          | <br>Authorized Representative   | <br>European Conformity | <br>QR Code            | <br>Consults Instructions<br>for Use | <br>Best Before  |



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

\*For LabUse Only

