

## **CM 21,206 - MIO MEDIUM (MOTILITY INDOLE ORNITHINE MEDIUM) (VEG.)**

### **INTENDED USE**

For identification of *Enterobacteriaceae* on the basis of motility, indole production and ornithine decarboxylase activity.

### **PRODUCT SUMMARY AND EXPLANATION**

MIO Veg Medium is prepared by using vegetable peptones which are free of BSE/TSE risks. MIO Veg Medium is the modification of MIO Medium which was formulated by Ederer and Clark and Oberhofer and Hajkowski for detection of motility, indole and ornithine decarboxylation in single culture tube.

Organisms possessing ornithine decarboxylase, decarboxylates ornithine to putrescine which increases the pH making it alkaline, indicated by colour change from yellow to purple throughout the medium. Decarboxylase negative reaction is indicated by yellow colour or yellow with a purple band near the top of the medium. Indole is produced from tryptophan present in Veg hydrolysate. The indole produced combines with the aldehyde present in the Kovac's reagent to form a red complex.

### **COMPOSITION**

| Ingredients               | Gms / Ltr |
|---------------------------|-----------|
| Veg hydrolysate           | 10.0      |
| Veg peptone               | 10.0      |
| Yeast extract             | 3.0       |
| L-Ornithine hydrochloride | 5.0       |
| Dextrose                  | 1.0       |
| Bromo cresol purple       | 0.02      |
| Agar                      | 2.0       |

### **PRINCIPLE**

Veg hydrolysate and Veg peptone provide amino acids and other nitrogenous substances. Yeast extract is the source of vitamin B complex. Dextrose is the fermentable carbohydrate. Cultures are stab-inoculated.

Motility and Ornithine decarboxylation reactions are read before testing indole production. Motile organisms show either diffused growth or turbidity extending away from stab inoculation line while non-motile organisms grow along the stab-line. Organisms ferment dextrose to form acid which causes the pH indicator bromo cresol purple to change from purple to yellow.

### **INSTRUCTION FOR USE**

Dissolve 31.00 grams in 1000 ml distilled water.

Heat to boiling to dissolve the medium completely.

Dispense in test tubes in 5 ml amounts.

Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

Cool the tubes in an upright position.

### **QUALITY CONTROL SPECIFICATIONS**

|                                      |                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Appearance of Powder</b>          | : Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder |
| <b>Appearance of prepared medium</b> | : Purple coloured clear to slightly opalescent gel forms in tubes as butts                  |
| <b>pH (at 25°C)</b>                  | : 6.5±0.2                                                                                   |



## INTERPRETATION

Cultural characteristics observed after an incubation.

| Microorganism                 | ATCC  | Inoculum (CFU/ml) | Growth    | Recovery | Motility                                                                                   | Indole production                                          | Ornithine Decarboxylation        | Incubation Temperature | Incubation Period |
|-------------------------------|-------|-------------------|-----------|----------|--------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------|------------------------|-------------------|
| <i>Escherichia coli</i>       | 25922 | 50-100            | luxuriant | >=70 %   | positive, growth away from stabline causing turbidity                                      | positive reaction, red ring at the interface of the medium | positive reaction, purple colour | 35-37°C                | 40-48 Hours       |
| <i>Enterobacter aerogenes</i> | 13048 | 50-100            | luxuriant | >=70 %   | positive, growth away from stabline causing turbidity                                      | Negative reaction                                          | positive reaction, purple colour | 35-37°C                | 40-48 Hours       |
| <i>Klebsiella pneumoniae</i>  | 13883 | 50-100            | luxuriant | >=70 %   | negative, growth along the stabline, surrounding medium remains clear                      | Negative reaction                                          | negative reaction                | 35-37°C                | 40-48 Hours       |
| <i>Proteus mirabilis</i>      | 25933 | 50-100            | luxuriant | >=70 %   | motility is temperature dependent, it is more pronounced at 20°C and almost absent at 35°C | Negative reaction                                          | positive reaction, purple colour | 35-37°C                | 40-48 Hours       |

## PACKAGING:

In pack size of 500 gm bottles.

## STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°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.

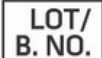
## DISPOSAL

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

## REFERENCES

1. Ederer and Clark, 1970, Appl. Microbiol., 20:849.
2. Oberhofer and Hajkowski, 1970, Am. J. Clin. Pathol., 54:720.



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|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <br><b>GMP</b><br>Good Manufacturing<br>Practices Certified | <br><b>IVD</b><br>For In Vitro Diagnostic Use                                                                            | <br><b>QTY.</b><br>Quantity          | <br><b>LOT/<br/>B. NO.</b><br>Lot / Batch Number | <br><b>REF</b><br>Catalogue Number           | <br><b>Manufacturer</b> |
| <br><b>Temperature Unit</b>                                 | <br><b>EC REP</b><br>Authorized Representative<br><small>MedNet GmbH<br/>Buckhorn 10,<br/>48163 Münster, Germany</small> | <br><b>CE</b><br>European Conformity | <br><b>QR<br/>Code</b>                           | <br><b>Consults Instructions<br/>for Use</b> | <br><b>Best Before</b>  |

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