

# M Motility Indol Ornithine Fluid Medium (MIO)

Art. No. 03-422

## Specification

Medium used for the demonstration of motility, indol production and the ornithine-decarboxylase activity of enterobacteria.

## Formula\* in g/L

Yeast extract.....	3,00
Gelatin peptone.....	10,00
Casein peptone.....	10,00
L-Ornithine HCl.....	5,00
Dextrose.....	1,00
Bromocresol purple.....	0,02
Agar.....	2,50
Final pH 6,6 ± 0,2 at 25°C	

\* Adjusted and /or supplemented as required to meet performance criteria

## Directions

Suspend 31,5 g of powder in 1 L of distilled water. Bring to the boil and distribute into appropriate tubes. Sterilize in the autoclave at 121°C for 15 minutes.

## Description

Remove all dissolved air in the medium by heating the tubes in a boiling water bath and cooling them to room temperature. Taking the growth of primary isolation as the inoculum, inoculate the tubes by a single deep stab. Incubate aerobically at 35 ± 2°C for 18-24 hours.

Motility can be observed by the diffuse growth at the upper side of the stab; meanwhile the non-motile bacteria grow along the stab, producing a clear streak.

Ornithine decarboxylation is indicated by the presence of a dark purple colour throughout the tube. Negative reaction produces only a single purple band at the top, and the rest of the tube changes to yellow.

Indol production is verified after the addition of a few drops of Kovacs' Reagent (Art. No. RE0007) (shake gently). The presence of a red ring signifies the positive reaction, if the colour is yellow the reaction is negative.

## References

- ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
- EDERER, G.M. & M. CLARK (1970) Motility-Indol-Ornithine Medium. Appl. Microbiol, 2:849-854.
- EWING, W.H. (1986) Edwards and Ewing's identification of Enterobacteriaceae. 4<sup>th</sup> ed. Elsevier Sci. Pub. Co. Inc. New York. NY. USA.
- FDA (Food and Drug Administrations) (1998) Bacteriological Analytical Manual. 8<sup>th</sup> ed. Revision A. AOAC International. Gaithersburg. MD.
- McFADDIN, J.F. (1985) Media for isolation-cultivation-identification-maintenance of medical bacteria. Williams & Wilkims. Baltimore. MD. USA.

## Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4°C to 30°C and <60% RH).

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## Quality control

**Incubation temperature:** 35°C ± 2,0

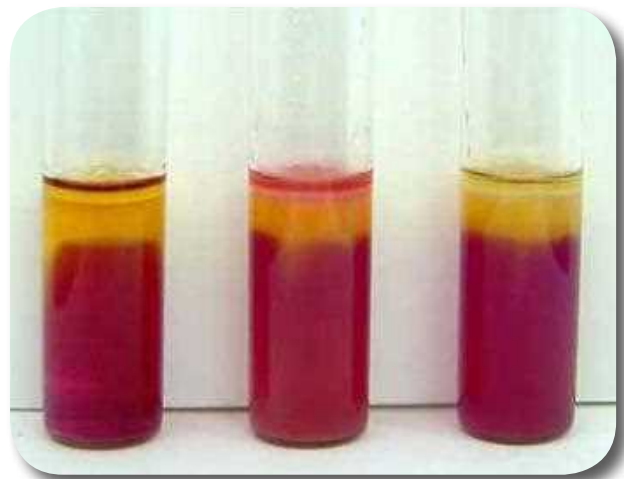
**Incubation time:** 24 - 48 h

**Inoculum:** Pure cultures using and inoculating needle

Microorganism	Growth	Remarks
<i>Escherichia coli</i> ATCC 25922	Good	ORN (+) Mot (+) I (+)
<i>Escherichia coli</i> ATCC 8739	Good	ORN (+) Mot (+) I (+)
<i>Klebsiella pneumoniae</i> ATCC13883	Good	ORN (-) Mot (-) I (-)
<i>Salmonella typhimurium</i> ATCC 14028	Good	ORN (+) Mot (+) I (-)
<i>Proteus mirabilis</i> ATCC 25933	Good	ORN (+) Mot (+) I (-)



Left: Uninoculated tube  
Centre: *Escherichia coli* ATCC 25922  
Right: *Salmonella typhimurium* ATCC 14028



"Detail"