BacterLab Division

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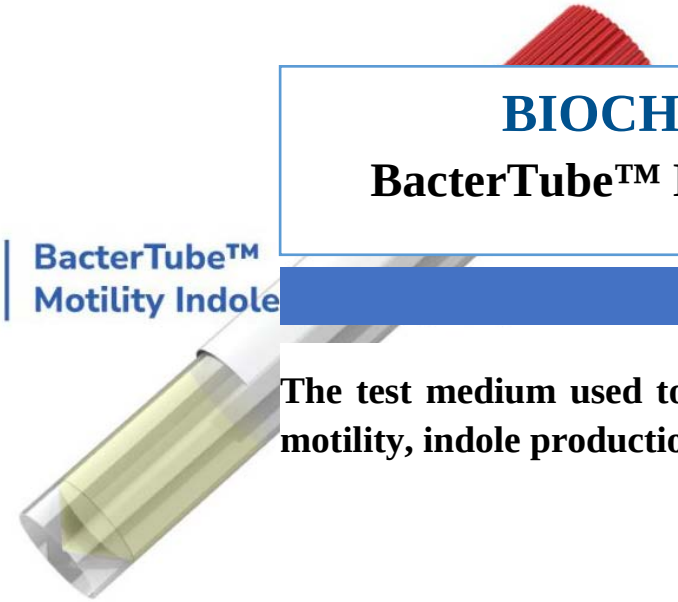

BIOCHEMICAL MEDIUM

BacterTube™ Motility Indole Urease (MIU)

The test medium used to differentiate *Enterobacteriaceae* based on motility, indole production, and urease activity

Code: 08029

1. INTENDED USE

BacterTube™ Motility Indole Urease (MIU) is formulated to detect motility, urease and indole production in single tube.

2. PRINCIPLES

Tryptone provide amino acids and other nitrogenous substances. Sodium chloride maintains osmotic equilibrium. Dextrose is fermentable carbohydrate. Phenol red is the pH indicator which turns pink- red in alkaline conditions. The test cultures are stab-inoculated.

Motility and urease reactions are read before testing Indole production. Motile organisms show either diffused growth or turbidity extending away from stab inoculation line while nonmotile organisms grow along the stabline. Organisms that utilize urea, produce ammonia which makes the medium alkaline, showing pink-red colour by change in the phenol red indicator. Indole is produced from tryptophan present in tryptone. The indole produced combines with the aldehyde present in the Kovac's reagent to form a red complex.

3. TYPICAL COMPOSITION

For 1 liter of medium

Tryptone	30,0 g
Sodium Chloride	5,0 g
Potassium Dihydrogen Phosphate	5,0 g
Phenol Red	0,004 g
Agar	3,0 g

pH of the ready-to-use medium at 25^0C: 6,8 ± 0,2

4. PREPARATION

The environmental tubes are ready-to-use, no preparation required.

5. INSTRUCTIONS FOR USE

- Allow the medium to reach room temperature before use.
- Inoculate the **BacterTube™ Motility Indole Urease (MIU)** with a single stab using a sterile needle or loop.
- Incubate at 35 – 37°C for 18 – 24 hours.
- For indole detection, add drops 3 or 4 of Kovac’s reagent to the surface of the medium.

6. RESULTS

- Motility is observed as growth radiating from the stab line or diffuse turbidity in the medium. Non-motile organisms grow only along the stab line.
- Urease activity is indicated by a color change to red.
- Indole production is demonstrated by the formation of a pink to red color after adding three to four drops of Kovac's reagent to the surface of the medium. A negative reaction is indicated by a yellow color (the color of Kovac's reagent).
- The red color of phenol red in an alkaline pH does not interfere due to the acidic nature of Kovac's reagent.

7. QUALITY CONTROL

BacterLab ensures the quality of each product batch by testing with ATCC reference strains.

Reference strain	Incubation conditions	Result		
		Mobility	Indole	Urease
Escherichia coli ATCC 25922	18 – 24 hours at 35 – 37^{0}C, aerobic	+	+	-
Shigella flexneri ATCC 9199		-	-	-
Salmonella typhi ATCC 14028		+	-	-
Proteus mirabilis ATCC 25933		+	-	+
Enterobacter aerogenes ATCC 13048		+	-	-

8. STORAGE AND TRANSPORT CONDITIONS

– Storage: 2 – 8°C.
– Transportation: Ambient temperature.

9. PACKAGING

– Packaging: 50 tubes/ box or as per customer request..

10. SHELF LIFE

– Expiration Date: 6 months from the manufacturing date.

11. BIBLIOGRAPHY

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