MIU Medium Base

Intended Use
MIU Medium Base is recommended for detection of motility, urease and indole production.

Summary
MIU Medium Base is formulated to detect motility, urease and indole production in single tube. Casein enzymic hydrolysate 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.

Principle
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 casein enzymic hydrolysate. The indole produced combines with the aldehyde present in the Kovac's reagent to form a red complex. 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 stab line.

Formula*

Ingredients	**g/L**
Casein Enzymic Hydrolysate	10.0
Dextrose	1.0
Sodium Chloride	5.0
Phenol Red	0.01
Agar	2.0
Final pH (at 25°C)	6.8 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 18.00 g of the powder in 950 mL purified / distilled water.
2. Heat to boiling to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Cool to about 50°C-55°C and add aseptically 50 mL sterile 40% Urea solution (204210060005), per 950 mL basal medium.
5. Mix well and dispense into sterile test tubes. Allow to cool in an upright position.

Quality Control
Dehydrated Appearance: Light orange to light pink coloured, homogenous free flowing powder.
Prepared Appearance: Light orange coloured, clear to slightly opalescent gel is obtained in tubes as butts.
Cultural Response: Cultural characteristics observed with added 40% urea solution (204210060005) after an incubation at 35°C-37°C for 18-24 hours.

Organism (ATCC)	Growth	Indole	Motility	Urease Activity
Escherichia coli (25922)	Good	Positive reaction, red ring at the interface of the medium	+	Negative reaction, no change
Klebsiella pneumoniae subsp. *pneumoniae* (10031)	Good	Negative reaction, no colour development/cloudy ring	-	Weakly positive
Proteus mirabilis (25933)	Good	Negative reaction, no colour development/cloudy ring	+	Positive reaction, cerise colour
Proteus hauseri (13315)	Good	Positive reaction, red ring at the interface of the medium	+	Positive reaction, cerise colour
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	Negative reaction, no colour development/cloudy ring	-	Negative reaction no change

Key: (+) for Motility - Growth away from stabline causing turbidity
(-) for Motility - Growth along the stabline, surrounding medium remains clear.
Note: Organism *Proteus hauseri* (13315) previously known as *Proteus vulgaris*.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Rustigian and Stuart (1941) Proc. Soc. Exp. Biol. Med., 47:108.
2. McFaddin J.F. (1985) Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore
3. Ewing (1986) Edwards and Ewings 'Identification of Enterobacteriaceae', 4th ed. Elsevier Science Publishing Co., Inc., New York.
4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201130090500	Dehydrated Culture Media	500 g