Technical Information

RS Medium Base

Product Code: DM 1576

Application: Rimler-Shotts (RS) Medium Base is used for selective isolation, cultivation and presumptive identification of *Aeromonas hydrophila*

Composition**

Ingredients	Gms / Litre
Yeast extract	3.000
Maltose	3.500
L-Cysteine hydrochloride	0.300
L-Lysine hydrochloride	5.000
L-Ornithine hydrochloride	6.500
Sodium thiosulphate	6.800
Ferric ammonium citrate	0.800
Sodium deoxycholate	1.000
Sodium chloride	5.000
Bromothymol blue	0.030
Agar	13.500
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

RS Medium formulated by Rimler and Shotts [2] is based on the principle of Xylose-Lysine (XL) Agars [3, 4] which is used for selective isolation and presumptive identification of *Aeromonas hydrophila* and other gram-negative bacteria. There microbes have ability for maltose fermentation, H_2S production and decarboxylate lysine and ornithine.

Yeast extract acts as a source of nutrients. Sodium thiosulphate, L-cysteine hydrochloride and ferric ammonium citrate are the indicators of H_2S production. The medium contains maltose, which is mostly fermented by all *Aeromonas* . Maltose fermentation is indicated by bromothymol blue. Sodium deoxycholate and novobiocin inhibit gram-positive bacteria and *Vibrio* species. *Citrobacter freundii* usually produce H_2S but occasionally negative strains exist. The medium contains L-cysteine and L-ornithine, which are often decarboxylated by enteric bacteria to give alkaline products. Lysine positive and ornithine positive strains of *Aeromonas* may not have the typical strong yellow colour because of alkaline products produced during decarboxylation of the amino acids. Results are interpreted within 24 hours since after 26 hours slow reversion of yellow colour to a basic (green) colour occurs. Medium should be incubated at 3 5°C, which will inhibit possible growth of *Aeromonas salmonicida,* which may grow at reduced temperatures giving false-positive reaction. Test the yellow colonies with or without black centers (of H_2S) for oxidase to rule out *Citrobacter* species. *Proteus mirabilis* fails to grow on this medium.

Methodology

Suspend 45.43 grams of powder media in 990 ml distilled water. Shake well & heat to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C and aseptically add rehydrated content of 1 vial of Novobiocin Supplement (MS2096). Mix well and pour into sterile Petri plates.

Quality Control

Physical Appearance
Light yellow to light green homogeneous free flowing powder
Gelling
Firm, comparable with 1.35% Agar gel.
Colour and Clarity of prepared medium
Dark green coloured Clear to slightly opalescent gel forms in Petri plates
Reaction
Reaction of 4.54% w/v aqueous solution at 25°C. pH : 7.0±0.2
pH Range:-
6.80-7.20
Cultural Response/Characteristics
DM 1576: Cultural characteristics observed after an incubation at 35-37°C for 24 hours with added Novobiocin Supplement(FD096)

Organism	Inoculum (CFU)	Growth	Maltose fermentation	Lysine/ Ornithine decarboxylation	H_2S
Aeromonas hydrophila *ATCC 7966*	50-100	good	positive reaction, yellowreaction coloured colonies	negative	negative reaction
Citrobacter freundii *ATCC 8090*	50-100	good	negative reaction	variable reaction	positive, black centered colonies
Escherichia coli *ATCC 25922*	50-100	good	negative reaction	variable reaction	negative reaction
Proteus vulgaris *ATCC 13315*	50-100	good	positive reaction, yellowreaction coloured colonies	negative	positive, black centered colonies
Salmonella Typhi *ATCC 6539*	50-100	good	positive reaction, yellowreaction coloured colonies	negative	Negative reaction

Storage and Shelf Lifez

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
2. Shotts E. B. Jr. and Rimler R., 1973, Appl. Microbiol., 26(4):550.
3. Taylor W. I. and Harris B., 1965, Am. J. Clin. Pathol., 44:476.
4. Taylor W. I., 1965, Am. J. Clin. Pathol., 44:471.

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