Rappaport Vassiliadis Soyabean Meal Broth (RVSM Broth) M1448

Rappaport Vassiliadis Soyabean Meal Broth is recommended as selective enrichment medium for the isolation of *Salmonella* species.

Composition**

Ingredients	Gms / Litre
Papaic digest of soyabean meal	4.500
Sodium chloride	7.200
Potassium dihydrogen phosphate	1.260
Dipotassium hydrogen phosphate	0.180
Magnesium chloride	13.580
Malachite green	0.036
Final pH (at 25°C)	5.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 26.75 grams in 1000 ml distilled water. Heat gently if necessary to dissolve the medium completely. Dispense as desired into tubes and sterilize by autoclaving at 10 lbs pressure (115°C) for 15 minutes.

Principle And Interpretation

Rappaport Vassiliadis Soyabean Meal Broth (RVSM) is modification of the Rappaport Vassiliadis Enrichment Broth, revised by van Schothorst (1-3). This medium is recommended as the selective enrichment medium for isolation of *Salmonella* . van Schothorst modified the original formula by addition of dipotassium hydrogen phosphate to buffer the medium and addition of anhydrous magnesium chloride to enhance the reliability of enrichment broth. Peterz (4) et al have also emphasized the importance of the concentration of magnesium chloride in the final medium.

The test specimen is added to Buffered Peptone Water (M614) and incubated at 35°C for 16 - 20 hours. This pre-enriched peptone water culture is inoculated into RVSM Broth and incubated at 42 ± 1°C for 24 - 48 hours and further subcultured on Brilliant Green Agar (M016). For faecal specimens, no pre-enrichment is needed. Add 1 or 2 loopfuls of liquid faeces (or an emulsion of faeces in saline) to 10 ml of RVSM Broth pre-warmed to 42°C. Incubate at 42 ±1°C for 24 hours and streak on to a selective agar.

The medium contains papaic digest of soyabean meal which provides essential growth nutrients. Magnesium chloride raises the osmotic pressure in the medium. Malachite green is inhibitory to organisms other than Salmonellae. The low pH of the medium, combined with the presence of malachite green and magnesium chloride, helps to select for the highly resistant *Salmonella* species. Phosphates buffer the medium to maintain the constant pH. Sodium chloride maintains the osmotic balance.

Quality Control

Appearance
Light yellow to light blue homogeneous free flowing powder

Colour and Clarity of prepared medium
Blue coloured clear solution without any precipitate.

Reaction
Reaction of 2.67% w/v aqueous solution at 25°C. pH : 5.2±0.2

pH
5.00-5.40

Cultural Response
M1448: Cultural characteristics observed after an incubation for 18-24 hours for following temperature.

Organism	Inoculum (CFU)	Growth at 42±1°C	Recovery	Growth at 35-37°C

Cultural Response

Escherichia coli ATCC 25922	50-100	fair	10-20%	poor
Salmonella Paratyphi B ATCC 8759	50-100	good	40-50%	good
Salmonella Typhi ATCC 6539	50-100	fair-good	30-40%	fair
Salmonella Typhimurium ATCC 14028	50-100	good-luxuriant	>=50%	good-luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. Rappaport F., Konforti N. and Navon B., 1956, J. Clin. Pathol., 9, 261-266
2. Van Schothorst M., Renauld A. and VanBeek C., 1987, Food Microbiol., 4:11-18.
3. Van Schothorst M. and Renauld A., 1983, J. Appl. Bacteriol., 54:209-215.
4. Peterz M., Wiberg C. and Norberg P., 1989, J. Appl. Bacteriol., 66,523-528.

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