

## Rappaport Vassiliadis Soya Broth (RVS Broth), Granulated

GM1491

Rappaport Vassiliadis Soya Broth (RVS Broth), granulated is recommended as a selective enrichment medium for the Salmonellae species from the food and animal feeding stuffs.

### Composition\*\*

Ingredients	Gms / Litre
Papaic digest of soyabean meal	4.500
Sodium chloride	8.000
Potassium dihydrogen phosphate	0.600
Dipotassium phosphate	0.400
Magnesium chloride, hexahydrate	29.000
Malachite green	0.036
Final pH ( at 25°C)	5.2±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 27.11 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml distilled water. Heat gently if necessary to dissolve the medium completely. Dispense into tubes or flasks as desired. Sterilize by autoclaving at 115°C for 15 mins.

### Principle And Interpretation

Rappaport Vassiliadis Soya Broth is designed according to the revised formulation by Van Schothorst et al (1) and is recommended for the selective enrichment of Salmonellae from pharmaceutical products. This medium can also be used in direct enrichment of samples containing low inoculum. Present medium is a modification of the Rappaport Vassiliadis Enrichment Broth described by Van Schothorst and Renauld (2). Addition of magnesium chloride to the medium was reported by Peterz et al (3). *Salmonella* species can be isolated from human faeces without pre-enrichment by using this medium.

*Salmonella* generally survive at little high osmotic pressure, grow at slightly low pH and are resistant to malachite green compared to other bacteria. These characteristics are exploited in this medium for selective enrichment of *Salmonella*. Magnesium chloride present in the medium raises the osmotic pressure. Natural sugars of Papaic digest of soyabean meal provide essential growth nutrients and enhance the growth of *Salmonella* (4). Phosphate buffers the medium to maintain constant pH. Sodium chloride maintains the osmotic balance. Malachite green inhibits many gram-positive bacteria, while selectively enrich *Salmonella*. The relatively lower concentration of nutrition, also aids selective enrichment of *Salmonella*. This medium was reported to be superior to *Salmonella* selective medium like Tetrathionate Broth and Selenite enrichment broth and to Tetrathionate-Brilliant Green Broth for the detection of Salmonellae in milk samples. The enriched culture of Rappaport Vassiliadis Soya Broth (GM1491/M1491) can be further subcultured and isolated on Brilliant Green Agar (GM016A/M016) or Deoxycholate Citrate Agar (GM065/M065), Xylose Lysine Deoxycholate Agar (GM031/M031).

### Quality Control

#### Appearance

Light yellow to light blue coloured granular medium

#### Colour and Clarity of prepared medium

Greenish blue clear to slightly opalescent with a slight precipitate.

#### Reaction

Reaction of 2.77% w/v aqueous solution at 25°C. pH : 5.2±0.2

#### pH

5.00-5.40

#### Cultural Response

Cultural response was observed after an incubation at 30-35°C for 18-24 hours Recovery is carried out using Xylose Lysine Deoxycholate Agar (GM031/ M031) after enrichment.

**Cultural Response**

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<b>Cultural Response</b>				
<i>Salmonella</i> Typhimurium ATCC 14028	50 -100	luxuriant	>=70 %	red with black centers
<i>Salmonella</i> Abony NCTC 6017	50 -100	luxuriant	>=70 %	red with black centers
<i>Staphylococcus aureus</i> ATCC 6538	>=10 <sup>3</sup>	inhibited	0%	
<i>Escherichia coli</i> ATCC 25922	50 -100	none-poor	0 -10 %	yellow
<i>Escherichia coli</i> ATCC 8739	50 -100	none-poor	0 -10 %	yellow
<i>Salmonella</i> Enteritidis ATCC 13076	50 -100	luxuriant	>=70 %	red with black centre
<i>Salmonella</i> Paratyphi B ATCC 8759	50 -100	luxuriant	>=70 %	red with black centre
<i>Staphylococcus aureus</i> ATCC 25923	>=10 <sup>3</sup>	inhibited	0%	
<i>Enterococcus faecalis</i> ATCC 29212	>=10 <sup>3</sup>	inhibited	0%	
<b>E.coli +S.Typhimurium (mixed culture)</b>				
<i>Salmonella</i> Typhimurium ATCC 14028	50 -100	luxuriant	>=70 %	red with black centre

**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. Van Schothorst M., Renauld A. and VanBeek C., 1987, Food Microbiol., 4:11.
2. Van Schothorst M. and Renauld A., 1983, J. Appl. Bact., 54:209.
3. Peterz M., Wiberg C. and Norberg P., 1989, J. Appl. Bact., 66:523
4. McGibbon L., Quail E. and Fricker C.R. 1984, Inter. J. Food Microbiol. 1:171

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