



Rappaport Vassiliadis R10 Medium

M1530

Rappaport Vassiliadis R10 Medium is recommended for selectively enriching *Salmonella* species from meat and dairy products, faeces and sewage polluted water.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	4.540
Sodium chloride	7.200
Potassium dihydrogen phosphate	1.450
Magnesium chloride	13.400
Malachite green oxalate	0.036
Final pH (at 25°C)	5.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 26.62 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Rappaport Vassiliadis R10 Broth is a selective enrichment medium that is used following pre-enrichment of the specimen in a suitable pre-enrichment medium. It has gained approval for use in analyzing milk and milk products (2), raw flesh foods, highly contaminated foods and animal feeds (1). Rappaport et al (4) formulated an enrichment medium for *Salmonella* that was modified by Vassiliadis et al (5). The Vassiliadis modification, designated R10/43°C, had a reduced level of malachite green and recommended incubation at 43°C. Later work by Peterz showed that incubation at $41.5 \pm 0.5^\circ\text{C}$ for 24 hours improved recovery of *Salmonella* species (3). Rappaport Vassiliadis R10 Broth medium selectively enriches for salmonellae because bacteria, including other intestinal bacteria, are typically resistant to or inhibited by malachite green, high osmotic pressure and/or low pH. *S. Typhi* and *S. Choleraesuis* are sensitive to malachite green and may be inhibited.

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. Potassium phosphate buffers 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

Greenish blue coloured clear to slightly opalescent solution that may have precipitate.

Reaction

Reaction of 2.66% w/v aqueous solution at 25°C. pH : 5.1±0.2

pH

4.90-5.30

Cultural Response

M1530: Cultural characteristics observed after an incubation at 42 - 43°C for 18-24 hours. After incubation, subculture on selective agar media like MacConkey Agar (M081) or XLD Agar (M031) and incubate at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth at 42±1°C	Recovery	Colour of colony
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<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	<=10%	pink-red
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	good-luxuriant	>=50%	colourless
<i>Salmonella Typhi</i> ATCC 6539	50-100	good-luxuriant	>=50%	colourless
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	good-luxuriant	>=50%	colourless

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. Horwitz, (Ed.), 2000, Official Methods of Analysis of AOAC International, 17th Ed., AOAC International, Gaithersburg, Md.
2. International Dairy Federation, 1995, Milk and Milk Products: Detection of Salmonella, IDF Standard 93B:1005. Brussels, Belgium.
3. Peterz M., Wiberg C. and Norberg P., 1989, J. Appl. Bacteriol., 66,523-528.
4. Rappaport F., Konforti N. and Navon B., 1956, J. Clin. Pathol., 9, 261-266
5. Vassiliadis P., Trichopoulos D., Kalandidi A. and Xirouchaki E., 1978, J. Appl. Bacteriol., 44:233.

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