

17173 Rappaport Vassiliadis Broth, modified (Salmonella Enrichment Broth acc. to Rappaport and Vassiliadis, RV Broth)

Used as a selective enrichment medium for the isolation of *Salmonella* species from food and environmental specimens.

Composition:

Ingredients	Grams/1100ml	Grams/litre
Papaic digest of soyabean meal	5.0	4.5
Sodium chloride	8.0	7.3
Monopotassium phosphate	1.6	1.45
Magnesium chloride anhydrous *	18.7	17.0
Malachite Green	0.04	0.036

Final pH 5.2 +/- 0.2 at 25°C

*18.7 g Magnesium chloride anhydrous is equivalent to 40 g Magnesium chloride hexahydrate used in the original formula by Rappaport et al [5].

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions:

Suspend 30.0 g 1 litre distilled water. Heat gently if necessary to dissolve the medium completely. Dispense as desired into tubes and sterilize by autoclaving at 115°C for 15 minutes.

Principle and Interpretation:

The malachite green and magnesium chloride concentrations are less than those of the Salmonella Enrichment Broth according to Rappaport (Cat No. 84370) in order to improve the growth of *Salmonella* at 43°C. Papaic digest of soyabean meal is a nitrogen and carbon source and improves the growth of *Salmonella*. Sodium chloride is for osmotic balance and magnesium chloride raises the osmotic pressure in the broth. Malachite green and magnesium chloride largely suppress the growth of the accompanying microbial flora found in the intestine, but not the growth of most Salmonellae. Only *S. typhosa* and *Shigellae* are usually inhibited by malachite green. *S. typhi* and *S. choleraesuis* are sensitive to malachite green and may be inhibited. Lowering pH to 5.2 increases selectivity. Novobiocin (40 mg/litre) can be added to enhance the inhibition of accompanying flora.

Cultural characteristics after 18-24 hours.

Organisms (ATCC/WDCM)	Inoculum [CFU]	Recovery 37°C	Recovery 42°C ±1°C	Color of Colony
<i>Salmonella enterica</i> serovar Paratyphi B (8795/-)	50-100	++	++	Pinkish white
<i>Salmonella enterica</i> serovar Typhi (6539/-)	50-100	+/++	++	Pinkish white
<i>Salmonella enterica</i> serovar Enteridis (13076/00030)	50-100	+++	+++	Pinkish white
<i>Salmonella enterica</i> serovar Typhimurium (14028/00031)	50-100	+++	+++	Pinkish white
<i>Escherichia coli</i> (25922/00013)	50-100	+	-/+	Yellowish green



References:

1. M. van Schothorst, A.M. Renaud, Dynamics of salmonellae isolation with modified Rappaport's medium (R 10), *J. Appl. Bact.*, 54, 209 (1983)
2. M. van Schothorst, A.M. Renaud, *Food Mikrobiol.*, 4, 11 (1987)
3. M. Peterz, C. Wiberg, P. Norberg, *J. Appl. Bact.*, 66, 523 (1989)
4. V. Kalapothaki, P. Vassiliadis, CH. Mavrommati, D. Trichopoulos, Comparison of Rappaport-Vassiliadis Enrichment Medium und Tetrathionate Brilliant Green Broth for Isolation of Salmonellae from Meat Products. - *J. Food Protection*, 46, 7, 618 (1982)
5. F. Rappaport, N. Konforti, B. Navon, *J. Clin. Path.* 9, 261 (1956)
6. P. Vassiliadis, E. Pallandiou, G. Papoutsakis, D. Trichopoulos, J.A. Papadakis, Essai des Milieux de Rappaport Modifiés à pH plus Élevé, dans la Multiplication des Salmonelles, *Arch. de l'inst. Pasteur Hellenique* (1977)
7. P. Vassiliadis, D. Trichopoulos, E. Pateraki, N Papaiconomou, Isolation of Salmonella from minced meat by the use of a new procedure of enrichment, *Zbl. Bakt. Hyg. I. Abt. Orig. B*, 166, 81 (1978)
8. P. Vassiliadis, E. Pateraki, N. Papaiconomou, J.A. Papadakis, D. Trichopoulos, Nouveau procédé d'enrichissement de Salmonell, *Ann. Microbiol. (Inst. Pasteur)*, 127 B, 195 (1976)
9. P. Vassiliadis, V. Kalapothaki, CH. Mavrommati, D. Trichopoulos, X. Zavitoanos, CH. Serie, Salmonella Isolation with Rappaport's Enrichment Medium of Different Compositions, *Zbl. Bakt. Hyg. I. Abt. Orig. B*, 173, 382 (1981)
10. P. Vassiliadis, V. Kalapothaki, CH. Mavrommati, D. Trichopoulos, CH. Serie, Improved Isolation of Salmonellae from Naturally Contaminated Meat Products by Using Rappaport-Vassiliadis Enrichment Broth, *Appl. Environm. Microbiol.*, 42, 4, 615 (1981)
11. P. Vassiliadis, The Rappaport-Vassiliadis (RV) enrichment medium for the isolation of salmonellas: An overview, *J. Appl. Bact.*, 54, 69 (1983)
12. P. Vassiliadis, V. Kalapothaki, CH. Mavrommati, D. Trichopoulos, A comparison of the original Rappaport medium (R medium) and the Rappaport-Vassiliadis medium (RV medium) in the isolation of salmonellae from meat products, *J. Hyg. Comb.*, 93, 51 (1984)
13. P. Vassiliadis, CH. Mavrommati, M. Efstratiou, G. Chromas, A note on the stability of Rappaport-Vassiliadis enrichment medium, *J. Appl. Bact.*, 59, 143 (1985)
14. R. Maijala, T. Johansson, J. Hirn, Growth of Salmonella and competing flora in five commercial Rappaport-Vassiliadis (RV)-media, *Intern. J. Food Microbiology*, 17, 1 (1992)
15. O. Pietzsch, Neue Aspekte des Anreicherungsverfahrens für Salmonellen, 25. Arbeitstagung des Arbeitsgebietes "Lebensmittelhygiene" der DVG, Garmisch-Partenkirchen (1984).
16. S. Tongpim, R.R. Beumer, S.K. Tamminga, E.H. Kampelmacher, Comparison of modified Rappaport's medium (RV) and Müller-Kauffmann medium (MK-iso) for the detection of Salmonella in meat products, *Int. J. Food Microbiol.*, 1, 33 (1984)
17. E.T. Aclaide, J.P. Martinez, P. Martinez-Germex, E. Garay, Improved Salmonella recovery from moderate to highly polluted waters, *J. Appl. Bact.*, 53, 143 (1982)
18. ISO 6579-1:2017, Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of Salmonella -- Part 1: Detection of Salmonella spp.

Precautions and Disclaimer

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