

## 92322 Rappaport Vassiliadis medium, base, modified, semi-solid (Modified Semi-Solid Rappaport Vassiliadis Medium Base; MSRV medium base)

The modified Semi-Solid Rappaport Vassiliadis medium is formulated according De Smedt and et al.. This shows its higher efficiency over the traditional enrichment methodology.

### Composition:

Ingredients	Grams/Litre
Tryptose	4.59
Casein Peptone	4.59
Sodium chloride	7.34
Mono-Potassium phosphate	1.47
Magnesium chloride	10.93
Malachite green	0.037
Agar	2.7
Final pH 5.2 +/- 0.2 at 25°C	

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.

Appearance: Faintly green-blue to beige coloured, homogeneous, free flowing powder.

Gelling: Semi-solid, firm with 0.27% agar gel

Color and Clarity: Light brownish-yellow to blue coloured clear to slightly opalescent gel forms in tubes.

### Directions:

Suspend 31.6 g in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C and aseptically add 20 mg/L of Novobiocin (74675). Mix well and pour into sterile petri plates. Keep plates in a fresh place to settle the gel (1 hour, minimum) and handle with care because the medium is only semi-solid.

### Principle and Interpretation:

Modified Semi-Solid Rappaport Vassiliadis Medium is formulated according De Smedt et al. It is more efficient as traditional enrichment methods. The rapid migration of mobile strains of *Salmonella* in the semisolid medium allows to the early detection by the production of a halo of growth around the inoculation zone.

Tryptose and casein peptone are sources of nitrogenous and carboneous compounds and improve the growth of *Salmonella*. Sodium chloride is for osmotic balance in the medium and potassium phosphate is the buffering agent. Malachite green and magnesium chloride largely suppress the growth of the accompanying microbial flora found in the intestine, but not the growth of most *Salmonella*. Only *S. typhosa* and *Shigella* species are usually inhibited by malachite green. *S. typhi* and *S. choleraesuis* are sensitive to malachite green and may be slightly inhibited. Novobiocin inhibits gram-positive bacteria by inhibition of bacterial DNA gyrase [6]. The low concentration of agar produces a very soft and fragile gel. That medium and the incubation temperature of 42°C optimize the motility for mobile strains of *Salmonella*.



Cultural characteristics after 24-62 hours at 41±0.5°C (after 4 hours Pre-enrichment).

Organisms (ATCC)	Growth	Remarks	Moility
<i>Enterococcus faecalis</i> (29212)	-	-	-
<i>Salmonella abony</i> (NCTC 6017)	+++	at 48 h the medium turns yellow-white	+
<i>Salmonella typhimurium</i> (14028)	+++	at 48 h the medium turns yellow-white	+

#### References:

1. J.M. De Smedt et al., Rapid Salmonella Detection in Foods by Motility Enrichment on a Modified Semi- Solid Rappaport-Vassiliadis Medium., J. Food Protect. Vol. 49, 7, 510-514 (1986)
2. J.M. De Smedt, R.F. Bolderdijk, Dynamics of Salmonella Isolation with Modified Semi-Solid Rappaport-Vassiliadis Medium, J. Food Protect. Vol. 50, 8, 658-661 (1987)
3. J.M. De Smedt et al., Int. J. Food Micro. 13, 301-308 (1991)
4. R. Holbrook, J.M. Anderson, A.C. Baird-Parker, L.M. Dodds, D. Sawhney, S.H. Struchbury, D. Swaine, Lett. Appl. Microbiol. 8. 139- 142 (1989)
5. J.M. De Smedt, Abstract 1.5. Int. Symposium - Food borne Pathogens: Detection and Typing, The Hague, The Netherlands 20th-21st April 1998 (1998)
6. N.R. Cozzarelli, Science, 207, 953-60 (1980)

#### Precautions and Disclaimer

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