Modified Semi-Solid Rappaport-Vassiliadis (MSRV) Agar (NCM0067)

Intended Use
Modified Semi-Solid Rappaport-Vassiliadis (MSRV) Agar is used with Novobiocin for the rapid detection of motile *Salmonella* spp. and is not intended for use in the diagnosis of disease or other conditions in humans.

Description
MSRV was developed in 1986 by De Smedt, Bolderdijk and Rappold as a rapid means of *Salmonella* detection. The medium, based upon Rappaport Vassiliadis broth, is inoculated directly from the pre-enrichment medium, in the center of the plate. Motile organisms spread from the center in the semi-solid agar, but non-salmonellas are inhibited by the selective agents. After overnight incubation the use of polyvalent salmonella antisera or a latex kit can confirm the presence of a *Salmonella.* Alternatively, a paper disc wetted with polyvalent H antiserum can be placed 1/3 of the way from the edge of the dish, and will signal the presence of a *Salmonella* by inhibiting the mobility of the organism around the disc. Using this medium De Smedt and Bolderdijk have reported the possibility of detecting *Salmonella* in 24hrs (1987).

Typical Formulation

Tryptone	2.3 g/L
Meat Peptone	2.3 g/L
Acid Hydrolysed Casein	4.65 g/L
Sodium Chloride	7.34 g/L
Potassium Dihydrogen Phosphate	1.5 g/L
Magnesium Chloride	10.9 g/L
Malachite Green	0.037 g/L
Agar	2.5 g/L

pH: 5.2 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution
Refer to SDS

Preparation
1. Suspend 31.5 grams of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. DO NOT AUTOCLAVE.
4. Cool to 45-50°C and add 2 vials of X150 or 10mL of 7985 Novobiocin Supplement.
5. Mix well and dispense into petri dishes.

Test Procedure
Pre-Enrichment: Add 25 g of cocoa or chocolate to 225 mL of sterile reconstituted nonfat dry milk with 0.45 mL of a 1% aqueous brilliant green dye solution; mix well. Incubate at 35°C for 20 ± 2 hours.

Selective Enrichment: Inoculate 10 mL of Tetrathionate Broth (prewarmed to 35°C) with 1 mL of the pre-enrichment culture. Incubate at 35°C for 8 ± 0.5 hours.

Motility Enrichment on MSRV: After selective enrichment incubation, mix the broth culture. Inoculate 3 drops at separate spots on an MSRV plate. Incubate at 42 ± 0.5°C for 16 ± 0.5 hours.

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Technical Specification Sheet

NEOGEN Culture Media

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and beige to pale blue beige.

Prepared Appearance: Prepared medium is trace to slightly hazy, dark blue and no precipitate.

Expected Cultural Response: Cultural response incubated aerobically at 41.5 ± 1°C and examined for growth after 18 – 51 hours.

Microorganism	Approx. Inoculum (per drop)	Expected Results	
		Growth	Motility
Enterobacter aerogenes ATCC® 13048	$>10^4$	Suppressed	Migration inhibited
Enterococcus faecalis ATCC® 29212	$>10^4$	Complete Inhibition	N/A
Enterococcus faecalis ATCC® 19433	$>10^4$	Complete Inhibition	N/A
Escherichia coli ATCC® 8739	$>10^4$	Suppressed	Migration inhibited
Escherichia coli ATCC® 25922	$>10^4$	Suppressed	Migration inhibited
Pseudomonas aeruginosa ATCC® 27853	$>10^4$	Suppressed	Migration inhibited
Salmonella enteritidis ATCC® 13076	$>10^4$	Good growth	Good Migration
Salmonella typhimurium ATCC® 14028	$>10^4$	Good growth	Good Migration

The organisms listed are the minimum that should be used for quality control testing.

Results

Positive: Growth of migrated cells is visible as a grey-white, turbid zone extending out from the inoculated drop. Test sample is considered presumptively positive for motile *Salmonella* spp.

Negative: Medium remains blue-green around inoculation drops, with no grey-white, turbid zone extending out from the drop. Test sample is considered negative for motile *Salmonella* spp.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

The combined inhibitory factors of this medium may inhibit certain *Salmonella*, such as *S. typhi* and S. *choleraesuis*. Isolation techniques should include a variety of enrichment broths and isolation media.

Storage

Store dehydrated culture media at 2 – 30°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

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5. Goossens, H., Wauters, G., De Boeck, M., Janssens, M., and Butzler, J.P. Semi-solid selective mobility enrichment medium for isolation of Salmonella from faecal specimens J. Clin. Microbiol 19 940-941. (1984).

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