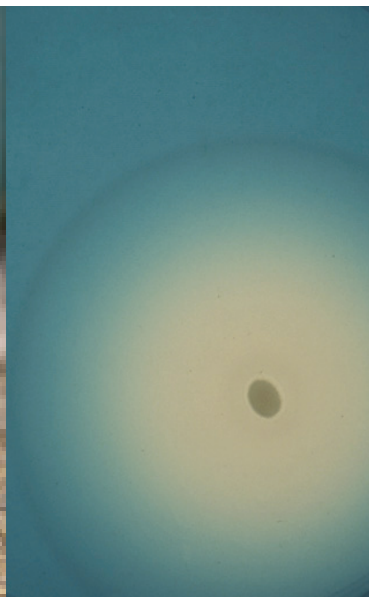
MSRV AGAR (ISO) CM1112



Summary of ISO 6579:2002 Annex D

Homogenise sample 1:10 in BPW and incubate at 37°C±1°C for 18 hours ± 3 hours

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Inoculate MSRV plates with 3 drops totalling 0.1ml Incubate at 41.5°C±1°C for 24 hours ± 3 hours

Typical colonies ↓

If plates are negative re-incubate for a further 24 hours ± 3 hours

2 x 1µl loop ↓

Plate onto XLD and a 2nd medium of choice and incubate at 37°C±1°C

↓

Appropriate biochemical and serological tests

↓

Confirmed *Salmonella* spp.

Modified Semi-solid Rappaport Vassiliadis agar for the selective enrichment of *Salmonella* species from food, environmental and animal faecal samples.

EASY TO USE

Salmonella is discriminated from background flora by its rapid motility through the semi-solid agar

IMPROVED SELECTIVITY

Motility through the semi-solid medium increases selectivity over Rappaport Vassiliadis enrichment broth for environmental and animal faecal samples[1]

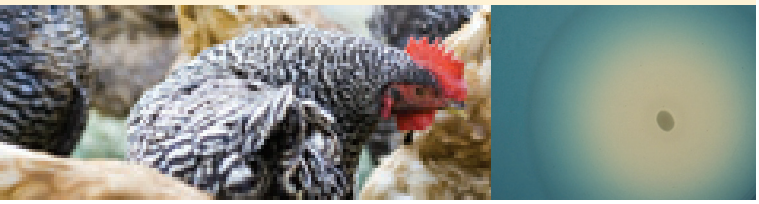
CONFIDENCE

Conforms to ISO 6579:2002 Annex D[1]

Part of our extensive range of ISO compliant media for food and environmental testing

SUMMARY

Modified Semi-solid Rappaport Vassiliadis (MSRV) medium is based on the formulation described by De Smedt *et al.* which has been shown to detect more *Salmonella*-positive samples than traditional enrichment procedures[2,3]. Further collaborative studies have confirmed these findings[4,5]. Motility enrichment on MSRV medium has been designed as a simple, sensitive method for the isolation of salmonellae from food and environmental samples. It has been incorporated into ISO 6579:2002 Annex D[1], which applies to the isolation of *Salmonella* spp. from animal faeces (such as poultry, pigs and cattle) and environmental samples associated with the primary production stage (such as dust). In Annex D, MSRV medium replaces Rappaport Vassiliadis broth, which is used in ISO 6579:2002 for the selective enrichment of *Salmonella* spp. in food.



PRINCIPLES

The efficiency of the medium is based on the ability of salmonellae to migrate through the selective medium ahead of competing Gram-negative, motile organisms, thus producing opaque halos of growth. Novobiocin and malachite green inhibit the growth of Gram-positive flora.

Subculture should be carried out from the migrated culture, with the inoculum being taken from the furthest edge of the growth. Presumptive identification is achieved by characteristic growth on XLD and a second agar of choice. Characteristic presumptive *Salmonella* colonies should be confirmed according to directions in ISO 6579:2002 Annex D[1], alternatively Oxoid Salmonella Latex Test FT0203 or DR1108 may be used for serological confirmation of *Salmonella* spp.The medium is not suitable for the detection of non-motile strains of *Salmonella* (incidence <0.1%)[6].

FORMULATION

Modified Semi-solid Rappaport-Vassiliadis agar (ISO)

MSRV Agar (ISO) CM1112	Grams per litre
Enzymatic digest of animal and plant tissue	4.6
Acid hydrolysate of casein	4.6
Sodium chloride (NaCl)	7.3
Potassium dihydrogenphosphate(KH_2PO_4)	1.5
Magnesium chloride anhydrous ($MgCl_2$)	10.9
Malachite green oxalate	0.04
Agar	2.7
Novobiocin supplement SR0181	
Novobiocin	0.01

pH 5.2 (5.1 to 5.4) at 25°C

DIRECTIONS

Suspend 31.64g of MSRV medium base in 1 litre of distilled water. Bring to the boil with frequent agitation. DO NOT AUTOCLAVE. Cool to 50°C and aseptically add the contents of 1 vial of Novobiocin supplement (SR0181) reconstituted as directed. Mix well and pour into sterile Petri dishes. This medium is semi-solid; do not invert plates.

METHOD OF USE

Refer to relevant standard method for detailed instructions. The following method is a summary of ISO 6579:2002 Annex D[1].

1. Prepare samples in accordance with the appropriate standard.
2. Add 25g of sample to 225ml of Buffered Peptone Water (CM1049) and stomach for 30 seconds.
3. Incubate at 37°C for 18h ± 2h.
4. Inoculate MSRV plates with 3 drops of the pre-incubated BPW culture totalling 0.1ml, equally spaced on the medium.
5. Incubate plates at 41.5°C for 24h ± 3h.
6. Motile *Salmonella* colonies are characterised by grey-white, turbid zones radiating from the point of inoculation. Zones are surrounded by a white halo with sharply defined border.
7. If plates are negative after 24h, they should be re-incubated for a further 24h ± 3h.
8. Select area of zone furthest from the point of inoculation and sample with a 1µl sterile loop.
9. Streak sample onto Xylose Lysine Deoxycholate agar (CM0469) and a second selective medium such as *Brilliance*™ Salmonella (CM1092).
10. Incubate at 37°C for 18 h ± 3 h.
11. Colonies can be sub-cultured onto Nutrient Agar (CM0003) to confirm purity and perform further biochemical and serological tests.

QUALITY CONTROL ORGANISMS

Organism	Culti-loop® order code	Typical colony appearance
Salmonella Typhimurium ATCC®14028™†	C6000L	Straw colonies at site of inoculation surrounded by halo of growth
Salmonella Enteritidis ATCC®13076™†	C8200L	Straw colonies at site of inoculation surrounded by halo of growth
Escherichia coli ATCC®8739™†	C7085L	Restricted or no growth
Enterococcus faecalis ATCC®29212™†	C7030L	Restricted or no growth
Pseudomonas aeruginosa ATCC®27853™†	C7060L	Restricted or no growth

REFERENCES 1. ISO 6579:2002 Annex D. Microbiology of food and animal feeding stuffs-Horizontal method for the detection of Salmonella spp. Detection of *Salmonella* spp. in animal faeces and in environmental samples from the primary production stage. 2. De Smedt J. M., Bolderdijk R., Rappold H. and Lautenschlaeger D. (1986) *J. Food. Prot.* **49**:510-514. 3. De Smedt J. M., Bolderdijk R. (1987) J. Food. Prot. 50:658-661. 4. De Zutter L. et al. (1991) Int. *J. Food Micro.* **13**:11-20. 5. De Smedt J. M. et al. (1991) Int. J. Food Micro. 13:301-308. 6. Holbrook R., Anderson J. M., Baird-Parker A. C., Dodds L. M., Sawhney D., Struchbury S. H. and Swaine D. (1989) *Lett. Appl. Microbiol.* **8**:139-142.

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