

DIASALM Base acc. To VAN NETTEN AND VAN DER ZEE

Diagnostic Salmonella semi-solid Rappaport Vassiliadis (Diasalm) Medium

Diasalm is a diagnostic semi-solid selective motility agar to be used for the isolation of *Salmonella* spp. in food and environmental samples.

Mode of Action

DIASALM combines the characteristics of semi-solid indole motility agar (SIM Agar) and Rappaport-Vasilliadis (RVS Broth). The selective system exploits the resistance of *Salmonella* spp. as compared to other Enterobacteriaceae to high osmolarity (MgCl_2) and low pH (5.5). The combination of novobiocin and malachite green suppresses the growth of Gram-positive bacteria and most, but not all Gram-negative bacteria. The semi-solid approach simultaneously enriches salmonellae and separates motile salmonellae from most competitive organisms resistant to the selective system. As a result of this on plating agars, salmonellae are rarely overgrown by non salmonellae. Sometimes salmonellae occur mixed with *Proteus*, *Hafnia* or *Enterobacter* spp. as interfering motile Enterobacteriaceae. A diagnostic system consisting of saccharose, lactose and bromocresol purple differentiates salmonellae from lactose and many lactose and saccharose dissimilating organisms. Non motile salmonellae growing at the inoculum spot(s) may produce a grey blackish center.

Typical Composition (g/litre)

Peptone from casein 13.5; peptone from meat 13.5; saccharose 7.5; lactose 0.5; ammonium iron(II) sulfate 0.2; sodium thiosulfate 0.8; potassium dihydrogen phosphate 1.47; magnesium chloride anhydrous 10.9; malachite green 0.037; bromocresol purple 0.08, agar-agar 2.7.

Preparation

Suspend 53 g in 1 litre of demin. water by heating in a boiling water bath or in a flowing steam until the medium is completely dissolved. Do not autoclave / do not overheat! Dissolve the lyophilisate of 1 vial MSR/V Selective Supplement (Cat. No. 1.09874.) by adding 1 ml sterile distilled water and add the solution to the medium cooled to 45-47 °C. Mix gently and pour plates.

pH: 5.5 ± 0.2 at 25 °C.

The prepared medium is clear and dark green.

The plates must be well dried before use (minimum: 1 h at room temperature).

Storage

Prepared plates can be stored for up to 1 week at +2 to +8 °C.

Experimental Procedure

1. Enrich the sample material in Buffered Peptone Water (incubation: 16-20 h at 35 °C).
2. Inoculate with either 3 drops (3 x 0.03 ml) or 1 drop of 0.1 ml of the pre-enrichment culture in the center of DIASALM medium plates.
3. Incubate the plates aerobically in an upright position at 42 °C for 12-18 h, but not longer than 24 h.

Evaluation

Motile salmonellae show a purple halo of growth originating from the inoculation spot. Against a white background the purple halo can be surrounded by a light brown black zone. A grey-blackish centre may suggest the presence of non-motile salmonellae, *Citrobacter freundii* or *Proteus* spp. On the edge of a typical migration zone a loopful is taken for subculture on plating agars e.g. Rambach agar, BPLS agar, mod. XLD agar. For the confirmation of *Salmonella* spp. further biochemical serological tests are recommended.

Literature

CURTIS, G.D.W., a. BAIRD, R.M. (eds): Pharmacopoeia of culture media for Food Microbiology: Additional Monographs (II). - *Int. J. of Food Microbiology* Vol 17; 230-233 (1993)

VAN DER ZEE, H.: Conventional methods for the detection and isolation of salmonella enteritidis. - *Int. J. Food Microbiol.*, 21; 41-46 (1994).

PUZICKOVA, V., KARPIKOVA, R., a. PAKROVA, E.: Use of semi-solid medium for the isolation of *Salmonella enteritidis*. - *Vet. Med. Praha* Vol 41 (9); 283-288 (1996).

VAN DER ZEE, H., a. VAN NETTEN, P.: Diagnostic selective semi-solid media based on Rappaport-Vassiliadis broth for detection of salmonella spp. and *Salmonella enteritidis* in foods. - *Proc. Symp. "Salmonella and Salmonellosis" Ploufragen.*; 69-77 (1992).

Ordering Information

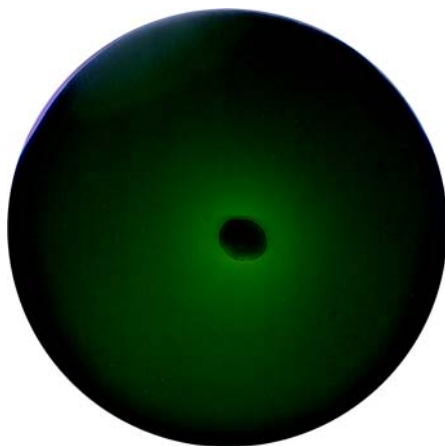
Product	Ordering No.	Pack size
DIASALM Base acc. To VAN NETTEN AND VAN DER ZEE	1.09803.0500	500 g
MSRV Selective-Supplement	1.09874.0001	1 x 16 vials
Peptone Water (buffered)	1.07228.0500	500 g
Peptone Water (buffered)	1.07228.5000	5 kg

DIASALM Base acc. To VAN NETTEN AND VAN DER ZEE

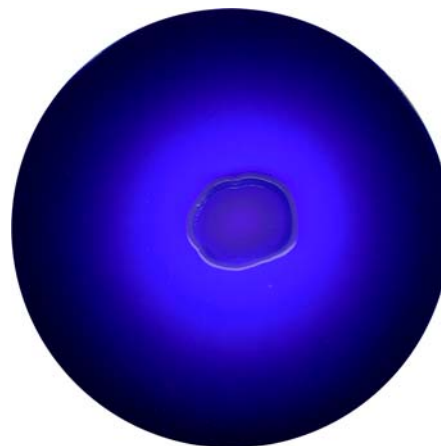
Diagnostic Salmonella semi-solid Rappaport Vassiliadis (Diasalm) Medium

Quality control

Test strains	Growth (swarming)	Motility zone (colour)
Salmonella typhimurium ATCC 14028	+	grey-violet, dark circle
Salmonella abony NCTC 6017	+	grey-violet, dark circle
Salmonella dublin ATCC 15480	+	grey-white, violet, dark circle
Salmonella enteritidis ATCC 13076	+	grey-white, violet, dark circle
Citrobacter freundii ATCC 8090	≤ 20 mm	greenish / yellow
Pseudomonas aeruginosa ATCC 9027	≤ 20 mm	grey-white, violet halo
Enterobacter cloacae ATCC 13047	≤ 20 mm	grey-white
Hafnia alvei ATCC 29926	≤ 20 mm	grey-white
Proteus mirabilis ATCC 29906	≤ 20 mm	grey-white / violet



Citrobacter freundii ATCC 8090



Salmonella enteritidis ATCC 13076