Technical Data Sheet

GranuCult™
RVS (RAPPAPORT-VASSILIADIS-Soya) Broth (Base) acc. ISO 6579

Ordering number: 1.07700.0500

For the selective enrichment of *Salmonella* from food and animal feed, water and other materials.

This culture medium complies with the specifications given by EN ISO 6579, EN ISO/FDIS 6579-1, EN ISO 6785 I IDF 93, EN ISO 19250.

Mode of Action

A modification of the originally described Rappaport medium, using soya peptone instead of tryptone (peptone from casein) was reported to improve recovery rates of Salmonella (Van Schothorst and Renaud, 1983 and Van Schothorst et al., 1987). This is in use as Rappaport-Vassiliadis soya peptone (RVS) broth.

The efficiency of RVS broth for salmonella is based on the following: (a) the ability of *Salmonella* spp. to multiply at relatively high osmotic pressures at relatively low pH values, at a high temperature and with modest nutritional requirements; and (b) the suppression of the toxic effect of malachite green towards salmonellae by the presence of magnesium chloride.

For the detection of some *Salmonella* serovars, other culture steps, e.g. other selective enrichment media, may be needed. For *Salmonella* Typhi and *Salmonella* Paratyphi, the procedure is described by EN ISO/FDIS 6579-1.

Typical Composition

Specified by ISO 6579, ISO FDIS 6579-1		GranuCult™ RVS (RAPPAPORT-VASSILIADIS-Soya) Broth (Base) acc. ISO 6579		
Enzymatic Digest of Soya	4.5 g/l	Enzymatic Digest of Soya	4.5 g/l	
NaCl	7.2 g/l	NaCl	7.2 g/l	
Potassium Dihydrogen Phosphate (KH_2PO_4 + K_2HPO_4)	1.44 g/l	K_2HPO_4	0.18 g/l	1.44 g/l
		KH_2PO_4	1.26 g/l	
$MgCl_2$, anhydrous	13.4 g/l	$MgCl_2$, anhydrous	13.4 g/l	
Malachite Green Oxalate	0.036 g/l	Malachite Green Oxalate	0.036 g/l	
Water	1000 ml/l	Water	n/a	
pH at 25 °C	5.2 ± 0.2	pH at 25 °C	5.2 ± 0.2	

Preparation

Dissolve 41.8 g in 1 l of purified water. Dispense into tubes or flasks and autoclave 15 min at 115 °C.

The prepared medium is clear and dark-blue. The pH value at 25 °C is in the range of 5.0-5.4.

Experimental Procedure and Evaluation

Depend on the purpose for which the medium is used.

Allow the RVS broth to equilibrate at room temperature if it was stored at a lower temperature.

According to EN ISO 6579, transfer 0.1 ml of the culture obtained in the pre-enrichment (Buffered Peptone Water) to a tube containing 10 ml of RVS broth. Minimize the transfer of particulate material from the pre-enrichment into the selective enrichment medium.

Incubate the inoculated broth under aerobic conditions, e.g. according to EN ISO 6579 40.5-42.5 °C for 21-27 h. Care should be taken that the maximum allowed temperature (42.5 °C) is not exceed.

From the culture obtained in RVS broth selective solid media are inoculated, see details given by EN ISO 6579 or other appropriate standard.

According to EN ISO/FDIS 6579-1, for some products it may be necessary to incubate the selective enrichment medium for an additional 24 h, then follow the same plating-out procedure as described above.

According to EN ISO/FDIS 6579-1, it is permissible to store the selective enrichment after incubation at +2 °C to +8 °C for a maximum of 72 h.

Storage

Store at +15 °C to +25 °C, dry and tightly closed. Do not use clumped or discolored medium. Protect from UV light (including sun light). For *in vitro* use only.

According to EN ISO/FDIS 6579-1, self-prepared complete medium can be stored in closed containers at +2 °C to +8 °C in the dark and protected against evaporation for up to three months.

Quality Control

Function	Control strains	Incubation	Method of control	Criteria	Expected results
Productivity	*Salmonella* Enteritidis ATCC® 13076 + *Escherichia coli* ATCC® 8739 + *Pseudomonas aeruginosa* ATCC® 27853	21-27 h at 40.5-42.5 °C	Qualitative	> 10 colonies on XLD	Colonies with black center on XLD agar acc. ISO 6579
	Salmonella Typhimurium ATCC® 14028 + *Escherichia coli* ATCC® 25922 + *Pseudomonas aeruginosa* ATCC® 27853				
Selectivity	*Escherichia coli* ATCC® 8739	21-27 h at 40.5-42.5 °C	Qualitative	Partial inhibition ≤ 100 colonies on Tryptic Soy Agar (TSA)	-
	Escherichia coli ATCC® 25922				
	Enterococcus faecalis ATCC® 19433			< 10 colonies on Tryptic Soy Agar (TSA)	
	Enterococcus faecalis ATCC® 29212				

Please refer to the actual batch related Certificate of Analysis.

The performance test is in accordance with the current version of EN ISO 11133.

Literature

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs - Horizontal method for the detection of *Salmonella* spp. EN ISO 6579:2002.

ISO International Standardisation Organisation. Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* - Part 1: Horizontal method for the detection of Salmonella spp. EN ISO/FDIS 6579-1:2015.

ISO International Standardisation Organisation. Milk and milk products - Detection of *Salmonella* spp. EN ISO 6785 I IDF 93:2001.

ISO International Standardisation Organisation. Water quality - Detection of *Salmonella* spp. EN ISO 19250:2010.

ISO International Standardisation Organisation. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media. EN ISO 11133:2014.

Mooijman, K.A. (2012): Culture media for the isolation of *Salmonella*. In: Handbook of Culture Media for Food and Water Microbiology. (Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. eds)., pp. 261-286. Royal Society of Chemistry, Cambridge, UK.

Van Schothorst M. and Renaud, A.M. (1983): Dynamics of salmonellae isolation with modified Rappaport's medium (R 10). J. Appl. Bact. **54**: 209-215.

Van Schothorst, M., Renaud, A.M. and van Beck, C. (1987): *Salmonella* isolation using RVS broth and MLCB agar. Food Microbiol. **4**: 11-18.

Ordering Information

Product	Cat. No.	Pack size	Other pack sizes available
GranuCult™ RVS (RAPPAPORT-VASSILIADIS-Soya) Broth (Base) acc. ISO 6579	1.07700.0500	500 g	
Novobiocin Sodium Salt	N6160-1-G	1 g	5 g, 25 g
ReadyTube™ 10 RVS Broth ISO 6579	1.46694.0020	20 x 10 ml	100 x 10 ml
GranuCult™ Buffered Peptone Water acc. ISO 6579, ISO 21528, ISO 22964, FDA-BAM and EP	1.07228.0500	500 g	5 kg, 25 kg
Readybag® Buffered Peptone Water acc. ISO 6579, ISO 21528, ISO 22964, FDA-BAM and EP, 5.7 g, irradiated	1.02448.0060	60 bags	60 bags x 29 g 35 bags x 86 g
ReadyTube™ 9 BPW ISO 6579, 6887, 21528	1.46142.0020	20 x 9 ml	100 x 9 ml, 6 x 225 ml, 6 x 1000 ml, 1 x 2000 ml
Granucult™ MKTTn (MULLER-KAUFFMANN Tetrathionate Novobiocin) Broth (Base) acc. ISO 6579	1.05878.0500	500 g	
Potassium Iodide	1.05043.0250	250 g	
Iodine resublimed	1.04761.0100	100 g	

Product	Cat. No.	Pack size	Other pack sizes available
MSRV (Modified Semi-solid RAPPAPORT-VASSILIADIS) Medium (Base) acc. ISO 6579	1.09878.0500	500g	
MSRV Selective Supplement	1.09874.0010	10 x 1 vial	
ReadyTube™12 MSRV Medium ISO 6579	1.46694.0100	100 x 12 ml	
Granucult™ XLD (Xylose Lysine Deoxycholate) Agar acc. ISO 6579	1.05287.0500	500 g	
ReadyPlate™ XLD Agar ISO 6579	1.46751.0020	20 x 90 mm	
RAMBACH® Agar	1.07500.0001	4 x 250 ml	4 x 1000 ml, 4 x 50 l
RAMBACH® Agar ready-to-use	1.46719.0020	20 x 90 mm	100 x 90 mm
Singlepath® Salmonella	1.04140.0001	25 test	
Bismuth Sulfite Agar acc. WILSON-BLAIR	1.05418.0500	500 g	
Triple Sugar Iron Agar	1.03915.0500	500 g	
Urea Agar (Base) acc. CHRISTIANSEN	1.08492.0500	500 g	
Urea GR for Analysis ACS, Reagent Ph Eur	1.08487.0500	500 g	
MR-VP (Methyl Red-VOGES-PROSKAUER) Broth	1.05712.0500	500 g	
KOVACS' Indole Reagent	1.09293.0100	100 ml	

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