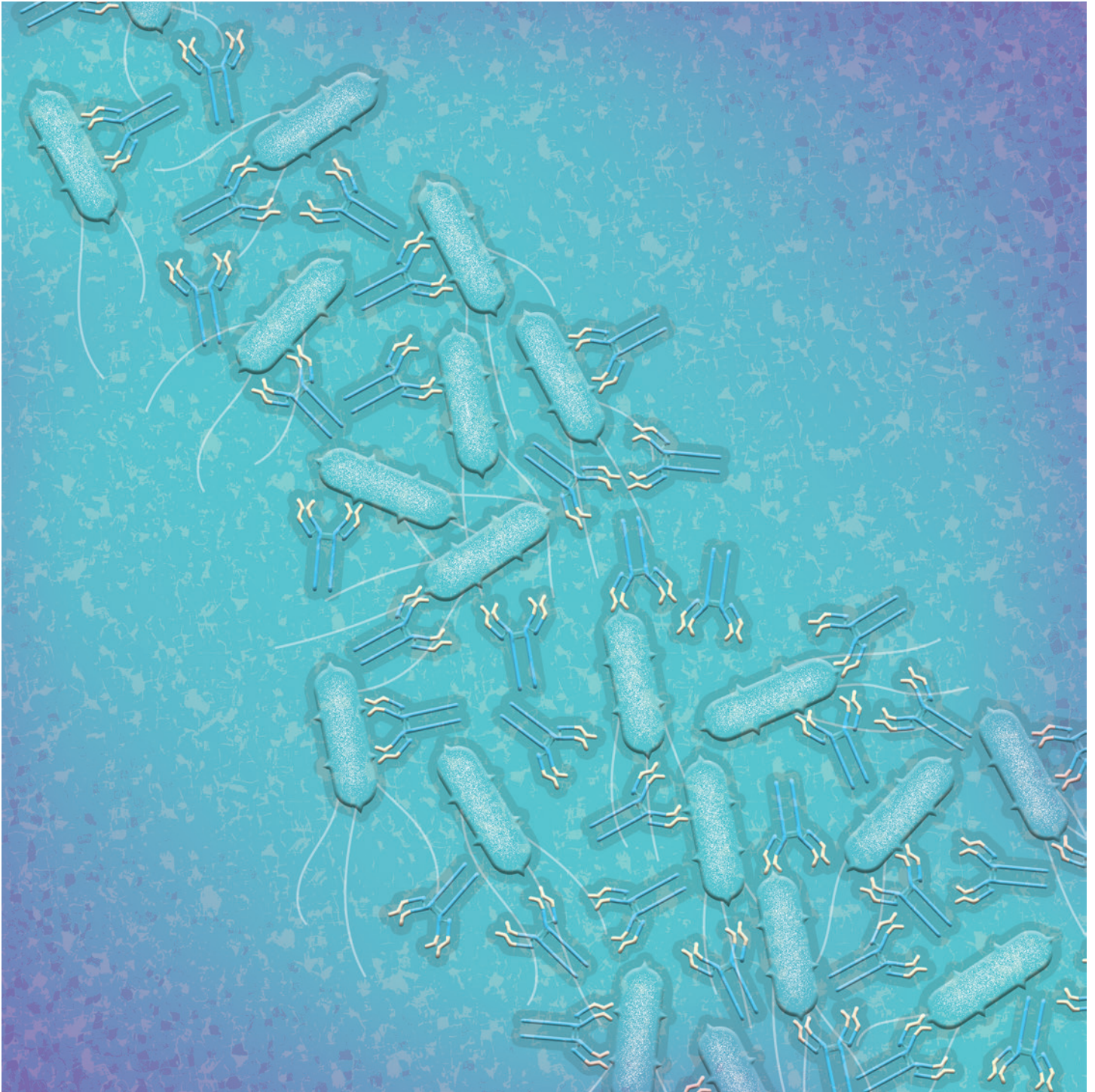


Identification of *Salmonella* by Serotyping

Antisera



Identification of *Salmonella* by Serotyping

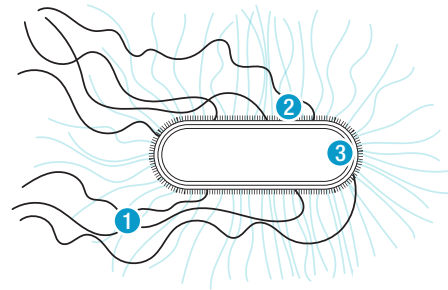
Detect and Identify *Salmonella* in Four Steps



Bio-Rad provides a complete solution for identifying *Salmonella* species, including sample enrichment media, chromogenic media, PCR detection kits, and a large selection of mono or polyvalent antisera.

Expertise in Serotyping

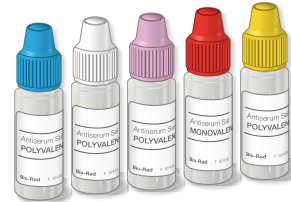
Serotyping is one of the classic tools for epidemiological study. For more than 20 years, Bio-Rad Laboratories, Inc., has offered tools for the accurate identification of microorganisms important in human disease, veterinary science, and food and water safety. Bio-Rad offers an extensive range of *Salmonella* antisera designed for the serological identification of cultures of organisms belonging to the genus *Salmonella* according to the Kauffmann-White classification (see Grimont and Weill 2007) using a qualitative on-slide agglutination method.



Antigenic structure of *Salmonella* used in serological typing. 1, flagella, H antigen; 2, capsule, Vi antigen; 3, cell wall, O antigen.

Antisera for *Salmonella* Identification

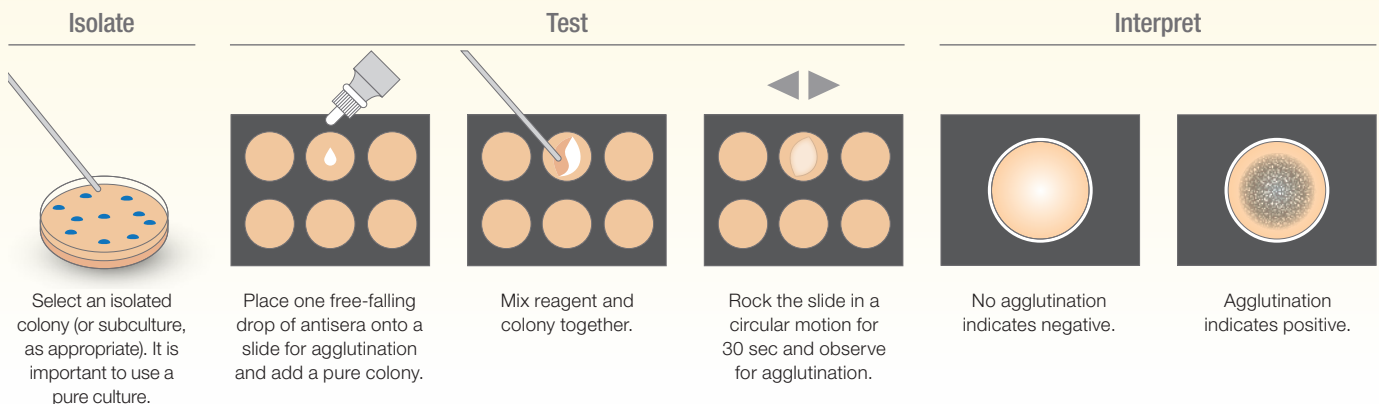
After sample enrichment and detection, confirmed *Salmonella* spp. isolates are tested with Bio-Rad antisera and are observed for agglutination reactions. *Salmonella* species are serotyped according to their somatic (O), flagellar (H), and, if present, capsular (Vi) antigens.



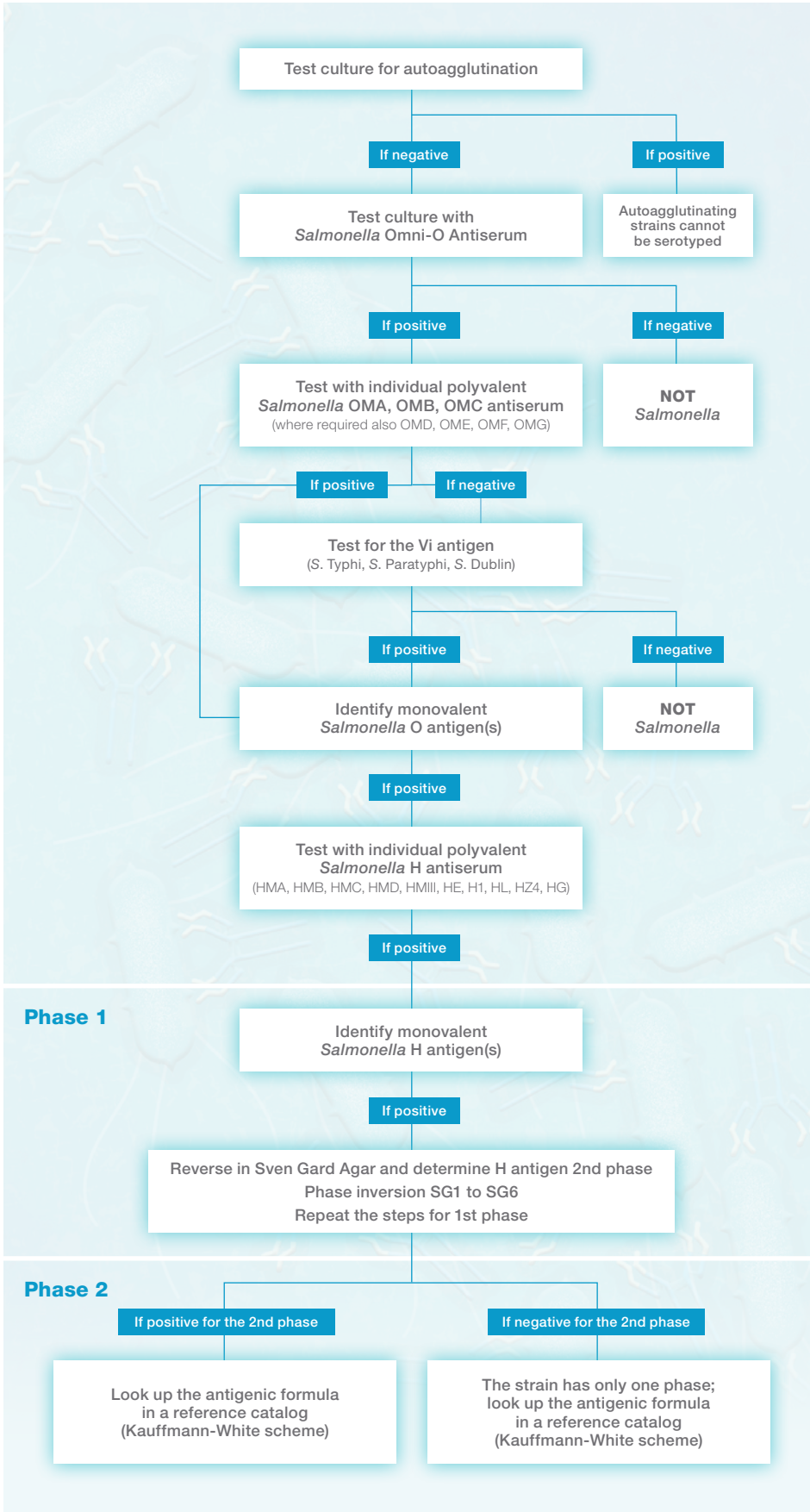
A broad range of antisera in individual 3 ml vials is available. Cost effective • high quality • rapid results • simple protocol • long shelf life

A Simple Method

Agglutination is the visible expression of the aggregation of surface antigens and antibodies. Slide agglutination reactions create visible aggregates, called agglutinates, that can be seen by the naked eye in a few seconds. The test is easy to use and quickly interpreted.



Salmonella Serotyping Workflow



- 1 Test for autoagglutination; strains that agglutinate in physiological water/saline cannot be serotyped.
- 2 Test with Omni-O Antiserum for the presumptive identification of O-agglutinating strains of *Salmonella*.
- 3 Test with polyvalent O antiserum. The most common groups are OMA, OMB, and OMC.
- 4 When agglutination occurs with one of these three groups, use individual monovalent O antisera to identify the specific O antigen(s).
- 5 When a strain does not agglutinate the OMA, OMB, or OMC polyvalent O sera, test the strain with Vi serum. If a Vi-positive reaction is observed, the bacterial suspension must be heated to 100°C for 30 min, and then tested again with polyvalent antisera and the corresponding monovalent antisera to define the O antigen.
- 6 Test for the H antigen, phase 1. Begin by testing with the polyvalent antisera, followed by the individual monovalent H antisera to identify the H antigen. Once the first H antigen is identified, perform a phase inversion on the isolate to force the organism to repress its dominant H phase and grow in the second phase.
- 7 Test for H antigen, phase 2. Take a culture at the periphery of the inversion zone of the Sven Gard Agar. Start by testing with the H polyvalent antisera. If there is no agglutination, the serotype contains only one phase. If there is agglutination, define the specific H antigen by using the relevant H monovalent antisera.
- 8 Once the antigenic formula with O, H-phase 1, and H-phase 2 are identified, the serotype can now be specified by referring to a reference catalog such as the Kauffmann-White scheme.

Reference

Grimont PAD and Weill FX (2007). Antigenic Formulae of the *Salmonella* Serovars, 9th Edition. World Health Organization Collaborating Center for Reference and Research on *Salmonella*, Institut Pasteur, Paris.

Ordering Information

Catalog #	Description	Catalog #	Description
Salmonella Presumptive Identification			
3560781B	<i>Salmonella</i> Omni-O Antiserum (A-60), 1 x 3 ml vial, 60 tests	3560241B	<i>Salmonella</i> Monovalent Antiserum H:z10
3556710	<i>Salmonella</i> Latex Test, 75 tests	3561111B	<i>Salmonella</i> Monovalent Antiserum H:2
Polyvalent O and Vi Sera to Guide Serotyping, 3 ml dropper bottle with 60 tests			
3560801B	<i>Salmonella</i> Polyvalent O Antiserum OMA, Groups A, B, D, E, L	3561112B	<i>Salmonella</i> Monovalent Antiserum H:5
3560811B	<i>Salmonella</i> Polyvalent O Antiserum OMB, Groups C, F, G, H	3561113B	<i>Salmonella</i> Monovalent Antiserum H:6
3560821B	<i>Salmonella</i> Polyvalent O Antiserum OMC, Groups I, J, K, L, M, N, O, P	3561114B	<i>Salmonella</i> Monovalent Antiserum H:7
3560831B	<i>Salmonella</i> Polyvalent O Antiserum OMD, Groups Q, R, S, T, U, W	Anti-H Phase Inversion Polyvalent Sera (Sven Gard method), 3 ml dropper bottle with 60 tests	
3560841B	<i>Salmonella</i> Polyvalent O Antiserum OME, Groups X, Y, Z, 51–53, 61	3561011B	<i>Salmonella</i> Polyvalent Antiserum SG1
3560851B	<i>Salmonella</i> Polyvalent O Antiserum OMF, Groups 54–59	3561021B	<i>Salmonella</i> Polyvalent Antiserum SG2
3560861B	<i>Salmonella</i> Polyvalent O Antiserum OMG, Groups 60–67	3561031B	<i>Salmonella</i> Polyvalent Antiserum SG3
3560951B	<i>Salmonella</i> Agglutinating Antiserum Vi	3561041B	<i>Salmonella</i> Polyvalent Antiserum SG4
Monovalent O Sera for Determination of Antigenic Formula, 3 ml dropper bottle with 60 tests			
3559031B	<i>Salmonella</i> Monovalent Antiserum O:1,2	3561051B	<i>Salmonella</i> Polyvalent Antiserum SG5
3559021B	<i>Salmonella</i> Monovalent Antiserum O:4,5	3561061B	<i>Salmonella</i> Polyvalent Antiserum SG6
3559062B	<i>Salmonella</i> Monovalent Antiserum O:6,7,8	Real-Time PCR Kits	
3559081B	<i>Salmonella</i> Monovalent Antiserum O:7	3578123	iQ-Check™ <i>Salmonella</i> II Kit, 96 reactions
3559091B	<i>Salmonella</i> Monovalent Antiserum O:8	3578142	iQ-Check <i>S. Enteritidis</i> PCR Detection Kit, 96 reactions
3559101B	<i>Salmonella</i> Monovalent Antiserum O:9	12004306	iQ-Check <i>S. Typhimurium</i> PCR Detection Kit, 96 reactions
3559112B	<i>Salmonella</i> Monovalent Antiserum O:3,10,15	Enrichment Supplements	
3559127B	<i>Salmonella</i> Monovalent Antiserum O:15	3564709	RAPID' <i>Salmonella</i> Capsules, 10x concentrated, 100 capsules
3559131B	<i>Salmonella</i> Monovalent Antiserum O:1,3,19	3564710	RAPID' <i>Salmonella</i> Capsules, 1x, 100 capsules
3559141B	<i>Salmonella</i> Monovalent Antiserum O:11	3564712	RAPID' <i>Salmonella</i> Agar, Supplement Box, 100 analysis
3559162B	<i>Salmonella</i> Monovalent Antiserum O:13,22,23	Nonselective Enrichment and Media	
3559171B	<i>Salmonella</i> Monovalent Antiserum O:6,14,24	3553430	Sven Gard Agar, 25 x 25 ml tubes, soft agar, for demonstrating the inapparent H antigen phase of biphasic <i>Salmonella</i>
Polyvalent H Sera to Guide Serotyping, 3 ml dropper bottle with 60 tests			
3560451B	<i>Salmonella</i> Polyvalent H Antiserum HMA	3564684	Buffered Peptone Water Plus, 500 g
3560461B	<i>Salmonella</i> Polyvalent H Antiserum HMB	3554179	Buffered Peptone Water Plus, 6 x 225 ml bottles
3560471B	<i>Salmonella</i> Polyvalent H Antiserum HMC	3555795	Buffered Peptone Water Plus, 4 x 3 L bags
3560481B	<i>Salmonella</i> Polyvalent H Antiserum HMD	3555790	Buffered Peptone Water Plus, 2 x 5 L bags
3560493B	<i>Salmonella</i> Polyvalent H Antiserum HM III, H factors of subspecies III, Arizona	12013259	Buffered Peptone Water Standard, dehydrated, 500 g
Polyvalent H Sera for Determination of Antigenic Formula, 3 ml dropper bottle with 60 tests			
3560401B	<i>Salmonella</i> Polyvalent H Antiserum H1	12013260	Buffered Peptone Water Standard, 2 x 5 L bags
3560411B	<i>Salmonella</i> Polyvalent H Antiserum HL	3564426	Modified Tryptone-Soy Broth (mTSB) Base, dehydrated, 500 g
3560391B	<i>Salmonella</i> Polyvalent H Antiserum HE	3555426	Modified Tryptone-Soy Broth (mTSB) + Novobiocin, ready to use, 6 x 225 ml bottles
3560431B	<i>Salmonella</i> Polyvalent H Antiserum HZ4	Diluent and Physiological Waters	
3560441B	<i>Salmonella</i> Polyvalent H Antiserum HG	3554154	Distilled Sterile Water, 25 x 9 ml tubes
Monovalent H Sera for Determination of Antigenic Formula, 3 ml dropper bottle with 60 tests			
3560111B	<i>Salmonella</i> Monovalent Antiserum H:a	3554164	Saline Sterile Water, 25 x 9 ml tubes
3560121B	<i>Salmonella</i> Monovalent Antiserum H:b	3561723	Disposable Agglutination Cards, 3 x 15 cards
3560131B	<i>Salmonella</i> Monovalent Antiserum H:c	RAPID'<i>Salmonella</i> Chromogenic Media	
3560141B	<i>Salmonella</i> Monovalent Antiserum H:d	3563961	RAPID' <i>Salmonella</i> Agar Plates, 20 x 90 mm plates
3561121B	<i>Salmonella</i> Monovalent Antiserum H:g, m	3563963	RAPID' <i>Salmonella</i> Agar Plates, 120 x 90 mm plates
3561122B	<i>Salmonella</i> Monovalent Antiserum H:g, p	3564705	RAPID' <i>Salmonella</i> Agar Plates, dehydrated, 500 g for 11.5 L of medium
3561119B	<i>Salmonella</i> Monovalent Antiserum H:h	Selective Enrichment and Media	
3560161B	<i>Salmonella</i> Monovalent Antiserum H:i	3556140	Muller-Kauffmann Tetrathionate Novobiocin Broth (MKTn Broth) Tubes, 50 x 10 ml tubes
3560171B	<i>Salmonella</i> Monovalent Antiserum H:k	3564714	Muller-Kauffmann Tetrathionate Novobiocin Broth (MKTn Broth), dehydrated base, 500 g
3561117B	<i>Salmonella</i> Monovalent Antiserum H:m	3556139	MSRV Medium (Semi-Solid Rappaport Vassiliadis Medium), 6 x 200 ml bottles
3561118B	<i>Salmonella</i> Monovalent Antiserum H:p	3564325	MSRV Medium (Semi-Solid Rappaport Vassiliadis Medium), dehydrated, 500 g
3561124	<i>Salmonella</i> Monovalent Antiserum H:q	3555773	Rappaport Vassiliadis Soya (RVS) Broth Tubes, ready to use, 50 x 10 ml tubes
3560201B	<i>Salmonella</i> Monovalent Antiserum H:r	3564324	Rappaport Vassiliadis Soya (RVS) Broth, dehydrated, 500 g
3560202	<i>Salmonella</i> Monovalent Antiserum H:s	Visit bio-rad.com/Antisera for more information.	
3561115B	<i>Salmonella</i> Monovalent Antiserum H:v	BIO-RAD is a trademark of Bio-Rad Laboratories, Inc. IQ-CHECK is a trademark of Bio-Rad Europe GmbH in certain jurisdictions. All trademarks used herein are the property of their respective owner. © 2023 Bio-Rad Laboratories, Inc.	
3561116B	<i>Salmonella</i> Monovalent Antiserum H:w		
3561123B	<i>Salmonella</i> Monovalent Antiserum H:x		
3560211B	<i>Salmonella</i> Monovalent Antiserum H:y		
3560221B	<i>Salmonella</i> Monovalent Antiserum H:z		



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