MAST® Culture Media and Supplements

Technical Information Sheet

Product Code DM 494

Buffered Peptone Water

A pre-enrichment medium designed to increase the recovery of sub-lethally injured *Salmonella* spp. prior to selective enrichment and isolation.

1. Description

MAST Buffered Peptone Water (DM494) is intended to be used as a pre-enrichment medium, prior to selective enrichment, in the isolation of *Salmonella* spp. from food. It is particularly valuable for the resuscitation of cells injured during food preservation processes.[1]

This was confirmed by Sadovski[2] who recommended Buffered Peptone Water as a preenrichment medium for use with frozen vegetable samples, to overcome problems encountered through the increased acid sensitivity of freeze injured salmonellae and to counteract the low buffering capacity of vegetable tissue.

After pre-enrichment, samples are transferred to enrichment broth for further incubation. Pietzsch

recommended Tetrathionate broth3 but later work by Vassiliadis[4] found Rappaport-Vassiliadis Broth (DM269) superior for the isolation of *Salmonella* spp. from both food and environmental samples.

2. Technical Formula*

Formula	grams per litre
Peptone mixture	10.0
Sodium chloride	5.0
Di-Sodium hydrogen phosphate	3.5
Potassium di-hydrogen phosphate	1.5
pH approx. 7.2	

3. Directions

1. Suspend by swirling 20g of powder in 1 litre or the contents of the sachet in the stated volume of distilled or deionised water.

2. Mix well and distribute 50ml or 225ml volumes, according to method chosen, into final containers.

3. Autoclave at 121°C (15p.s.i.) for 15 minutes.

*Formulation may be modified to meet performance criteria

4. In Use

1. Tetrathionate Broth Enrichment

Asceptically inoculate 10ml of test material into 50ml of MAST Buffered Peptone Water.

Incubate at 37ºC for 18-24 hours. Transfer 10ml to 100ml of Mueller-Kaufmann Tetrathionate Broth.

Incubate at 43ºC and subculture to MAST Brilliant Green Agar (DM105) after 24 and 48 hours.

2. Rappaport Vassiliades Broth Enrichment

Add 25g or 25ml of food or environmental samples to 225ml of MAST Buffered Peptone Water.

Incubate at 37ºC for 18-20 hours. Transfer 0.1ml to 10ml of MAST Buffered Rappaport Vassiliadis Broth (DM269).

Incubate at 42ºC ± 1.0ºC and subculture to MAST Brilliant Green Agar (DM105-1 or DM105- 2) at 24 hours.

For both methods, incubate Brilliant Green Agar plates at 37ºC for 18-24 hours and examine for colonies of *Salmonella* spp. Suspect colonies should be confirmed by biochemistry or serology.

5. References

1. Edel W, Kampelmacher EH. Comparative studies on the isolation of "sub-lethally injured" salmonellae in nine European laboratories. *Bull Wld Hlth Org*. 1973; **48:** 167-174

2. Sadovski AY. Technical note: Acid sensitivity of freeze injured salmonellae in relation to their isolation from frozen vegetables by preenrichment procedure. *J Fd Technol.* 1977; **12:** 85-91.

3. Pietzsch O, Kretschmer FJ, Bulling E. Comparative studies of methods of salmonella enrichment. *Zbl Bakt Hgy I Abt*. Orig. 1975; **A232:** 232-246

4. Vassiliadis P. The Rappaport-Vassiliadis (RV) enrichment medium for the isolation of salmonellae: An overview. *J Appl Bact*. 1983; **54:** 69-76

CE

Mast Group Ltd.
Mast House, Derby Road, Bootle
Liverpool, Merseyside, L20 1EA
United Kingdom
Tel: + 44 (0) 151 472 1444
Fax: + 44 (0) 151 944 1332
email: sales@mastgrp.com
Web: www.mastgrp.com

Mast Diagnostica GmbH
Feldstrasse 20
DE-23858 Reinfeld
Germany
Tel: + 49 (0) 4533 2007 0
Fax: + 49 (0) 4533 2007 68
email: mast@mast-diagnostica.de
Web: www.mastgrp.com

Mast Diagnostic
12 rue Jean-Jacques Mention
CS91106, 80011 Amiens, CEDEX 1
France
Tél: + 33 (0) 3 22 80 80 67
Fax: + 33 (0) 3 22 80 99 22
email: info@mast-diagnostic.fr
Web: www.mastgrp.com

Mast Group

*Formulation may be modified to meet performance criteria