MAST® Culture Media and Supplements

Technical Information Sheet

Product Code DM 228

Urea Agar Base and Urea Solution

For the detection of urease producing organisms.

1. Description

Various media for detecting urease production have been described, some of the earliest being strongly buffered urea broths.1,2 Later, Christensen3 devised a urea agar medium which included peptone and dextrose, with a reduced buffer content. This medium supported a more luxuriant growth of many enteric bacteria and allowed a more reliable detection of urease. Cook[4] confirmed the superiority of Christensen's medium over highly buffered media and showed its value in the routine investigation of nonlactose fermenting organisms isolated from faeces. MAST Urea Agar Base follows the Christensen formulation and enables detection of proteus in 3-5 hours. Urease production has now been detected in strains of *Proteus, Klebsiella, Citrobacter, Yersinia, Serratia,* and *Enterobacter.* Reports of urease production in *E.coli* have been rare, but Lesher and Jones (1978)5 isolated 24 lactose fermenting urease positive strains of haemolytic *E.coli* from a variety of clinical materials. So far, however, there appear to have been no reports of urease production in salmonellae or shigellae, and the value of the urease test still remains.

2. Technical Formula*

Formula	grams per litre
Bacteriological peptone	1.0
Potassium dihydrogen phosphate	0.8
Phenol red	0.012
Dextrose	1.0
Di-Sodium hydrogen	1.2
Sodium chloride	5.0
Agar	14.0
pH approx. 6.8	

3. Directions

1. Suspend by swirling 4.6g of powder in 190ml or the contents of the sachet in the stated volume of distilled or deionised water.

2. Autoclave at 115°C (10p.s.i.) for 20 minutes.

3. Cool to 50°C.

4. Add asceptically 10ml of 40% w/v Urea Solution (DM228s).

5. Mix well and distribute 10ml amounts of media into sterile containers.

6. Allow to set as slopes.

*Formulation may be modified to meet performance criteria

4. In Use

Heavily inoculate the surface of the Urea Agar slope and incubate for 3-5 hours at 37°C. Urease producing organisms produce a red colour in the medium due to the liberation of ammonia, and such bacteria should be regarded as not belonging to the Salmonella or Shigella groups.

5. References

1. Rustigan R, Stuart CA. *J Bact*. 1945; **49:** 419- 436

2. Ferguson WW, Hook AE. *J Lab Clin Med.* 1943; **28:** 1715-1720.

3. Christensen WB. *J Bact*. 1946; **52:** 461-466

4. Cook G. *J Path Bact.* 1948; **60:** 171-181

5. Lesher RJ, Jones WH. *J Clin Microbiol*. 1978;

8: (3) 344-345

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*Formulation may be modified to meet performance criteria

Urea Solution

A liquid supplement for the detection of urease producing organisms.

1. Description

A 40% w/v solution of urea sterilised by filtration. This supplement is designed for use with MAST Urea Agar Base (DM228) and Kohn's No.1 Medium (DM138-1) to detect bacterial production of urease

Presentation

10x10ml screw capped bottles.

Directions

Urea Agar Base (DM228)

1. Suspend by swirling 4.6g of powder in 190ml or the contents of the sachet in the stated volume of distilled or deionised water.

2. Autoclave at 115°C (10 p.s.i.) for 20 minutes.

3. Cool to 50°C.

4. Add asceptically 10ml of 40% w/v Urea Solution (DM228s) to every 190ml of Urea Agar Base.

5. Mix well and distribute 10ml amounts of media into sterile containers.

6. Allow to set as slopes.

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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

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