CRAMP Agar Base

M1243

Intended Use:

Recommended for the cultivation of *Yersinia* species with plasmids.

Composition**

Ingredients	Gms / Litre
Galactose	2.000
Acicase™#	2.000
Congo red	0.005
Sodium chloride	2.900
Morpholine propane sulfonic acid (MOPS)	8.400
Ammonium chloride	0.500
Sodium thiosulphate	0.600
Dipotassium hydrogen phosphate	0.240
Magnesium sulphate	0.0986
Tricine	1.800
Agarose	14.000
Final pH (at 25°C)	5.3±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Casein acid hydrolysate

Directions

Suspend 32.54 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Distribute into tubes or flasks or as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Yersinia is a gram-negative bacillus belonging to the family *Enterobacteriaceae*. *Yersinia* is usually nitrate reductase positive, oxidase negative, urease positive and generally has both respiratory and fermentative type of metabolism.

CRAMP (Congo Red Acid Morpholine propane sulfonic acid Pigmentation) Agar Base is used for the cultivation of Yersinia species with plasmids (6). The congo red reaction is used for virulence test of Yersinia and to identify Plasmid-bearing colonies (4), since pathogenicity is associated with the presence of plasmids.

Acicase serves as nitrogen source. Morpholine propane sulfonic acid and tricine are the buffers in the medium. Galactose serves as carbon source. Congo red is the indicator dye in the medium. The salts provide essential ions required by the organism.

Type of specimen

Food and dairy samples.

Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,5,7). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical tests must be carried out for further confirmation.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.4% Agarose gel.

Colour and Clarity of prepared medium

Red coloured, clear to slightly opalescent gel forms in Petri plates/tubes

Reaction

Reaction of 3.25% w/v aqueous solution at 25°C. pH : 5.3±0.2

pH

5.10-5.50

Cultural Response

Cultural characteristics observed after an incubation at 32°C for 24 - 48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Yersinia enterocolitica ATCC 27729	50-100	good-luxuriant	>=50%

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use.

Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.

2. Isenberg, H.D. Clinica Microbiology Procedures Handbook. 2nd Edition.

3. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

4. Prpic J. K., Robins- Browne R. M. and Davey B., 1983, J. Clinic. Microbiol., 18: 486

5. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

6. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.

7. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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