IFU

Instructions for Use

MANNITOL YOLK POLYMYXIN (MYP) AGAR

Cat. no. G147	Mannitol Yolk Polymyxin Agar, 15x100mm Plate, 18ml	10 plates/bag

INTENDED USE

Hardy Diagnostics Mannitol Yolk Polymyxin (MYP) Agar is recommended for the enumeration, detection and isolation of *Bacillus cereus* in food.

This product is not intended to be used for the diagnosis of human disease.

SUMMARY

Bacillus cereus is commonly found in nature, on vegetables and in some processed foods. Under favorable conditions, the organism can grow to sufficient numbers and cause gastrointestinal illness. Outbreaks of foodborne illness have been associated with the ingestion of boiled and cooked rice, cooked meats, cooked vegetables and a variety of other food types. *B . cereus* is the etiological agent in two distinct types of food-poisoning syndromes: (1) diarrheal type, characterized by abdominal pain with diarrhea 8 to 16 hours after ingestion of the contaminated food, and (2) the emetic type, characterized by nausea and vomiting 1 to 5 hours after eating the contaminated meal. *Bacillus cereus* spores can survive normal cooking processes and when the cooked food is stored improperly, the spores germinate and vegetative cells multiply. The toxin or other virulence factors responsible for the syndromes has not yet been identified.

Mosel et al., formulated Mannitol Egg Yolk Polymyxin Agar to isolate and enumerate *Bacillus cereus* from foods. MYP Agar contains beef extract, nitrogen, vitamins and minerals. Mannitol is the carbohydrate source. Phenol Red is the pH indicator. Polymyxin inhibits normal microbial flora present in the sample. Bacteria that produce lecithinase hydrolyze the lecithin in the egg yolk. The insoluble products of egg yolk lecithin accumulate around the colonies to form a zone of white precipitate. Bacteria which ferment mannitol produce acid products and will form colonies that are yellow. *Bacillus cereus* is typically mannitol-negative (pink to red colonies) and lecithinase-positive (zone of precipitate around the colonies).

FORMULA

Ingredients per liter of deionized water:*

Mannitol	10.0gm
Peptone	10.0gm
Sodium Chloride	10.0gm
Meat Extract	1.0gm
Phenol Red	0.025gm
Egg Yolk Emulsion	100.0ml

Polymyxin	25,000U
Agar	14.0gm

Final pH 7.2 +/- 0.2 at 25ºC.

* Adjusted and/or supplemented as required to meet performance criteria.

STORAGE AND SHELF LIFE

Storage: Upon receipt store at 2-8ºC away from direct light. Media should not be used if there are any signs of contamination, deterioration, discoloration, or if the expiration date has passed. Product is light and temperature sensitive; protect from light, excessive heat, and freezing.

The expiration date on the product label applies to the product in its intact packaging when stored as directed. The product may be used and tested up to the expiration date on the product label and incubated for the recommended incubation times as stated below.

Refer to the document "Storage" for more information.

PRECAUTIONS

This product may contain components of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not guarantee the absence of transmissible pathogenic agents. Therefore, it is recommended that these products be treated as potentially infectious, and handle observing the usual universal blood precautions. Do not ingest, inhale, or allow to come into contact with skin.

This product is for laboratory use only. It is to be used only by adequately trained and qualified laboratory personnel. Observe approved biohazard precautions and aseptic techniques. All laboratory specimens should be considered infectious and handled according to "standard precautions." Refer to the document "Guidelines for Isolation Precautions" from the Centers for Disease Control and Prevention.

For additional information regarding specific precautions for the prevention of the transmission of all infectious agents from laboratory instruments and materials, and for recommendations for the management of exposure to infectious disease, refer to CLSI document M29: *Protection of Laboratory Workers from Occupationally Acquired Infections.*

Sterilize all biohazard waste before disposal.

Refer to the document "Precautions When Using Media" for more information.

PROCEDURE

1. Inoculate the plates by spreading the sample on the surface of the medium.

2. Incubate for 18-48 hours at 30 +/- 2ºC.

3. Examine for the presence of colonies typical of *Bacillus cereus* . Colonies will appear rough, dry and pink or purple in color surrounded by a zone of dense white precipitate.

Consult references for detailed procedure.[2-4]

INTERPRETATION OF RESULTS

Consult appropriate references.[2-4]

LIMITATIONS

It is recommended that biochemical, immunological, molecular, or mass spectrometry testing be performed on colonies from pure culture for complete identification of bacteria and/or fungi.

Refer to the document "Limitations of Procedures and Warranty" for more information.

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as loops, swabs, applicator sticks, other culture media, incinerators, and incubators, etc., as well as serological and biochemical reagents, are not provided.

QUALITY CONTROL

Hardy Diagnostics tests each lot of commercially manufactured media using appropriate quality control microorganisms and quality specifications as outlined on the Certificate of Analysis (CofA) and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media*. The following microorganisms are routinely used for testing at Hardy Diagnostics:

Test Organisms	Inoculation Method*	Incubation			Results
		Time	Temperature	Atmosphere	
Bacillus cereus ATCC® 13061	A	18-48hr	30-35°C	Aerobic	Growth; pink to red colonies with zone of whitish precipitate
Bacillus subtilis ATCC® 6633	A	18-48hr	30-35°C	Aerobic	Growth; yellow colonies with no zone of preciptate
Pseudomonas aeruginosa ATCC® 27853	B	18-48hr	30-35°C	Aerobic	Partial to complete inhibition

* Refer to the document "Inoculation Procedures for Media QC" for more information.

USER QUALITY CONTROL

End users of commercially prepared culture media should perform QC testing in accordance with applicable government regulatory agencies, and in compliance with accreditation requirements. Hardy Diagnostics recommends end users check for signs of contamination and deterioration and, if dictated by laboratory quality control procedures or regulation, perform quality control testing to demonstrate growth or a positive reaction and to demonstrate inhibition or a negative reaction, if applicable. Hardy Diagnostics quality control testing is documented on the certificate of analysis (CofA) available from Hardy Diagnostics Certificate of Analysis website. Also refer to the document "Finished Product Quality Control Procedures," and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media* for more information on the appropriate QC procedures. See the references below.

PHYSICAL APPEARANCE

Mannitol Yolk Polymyxin (MYP) Agar should appear slightly opalescent to opaque, and pink-orange to light orange in color.

REFERENCES

1. Jorgensen., et al. *Manual of Clinical Microbiology*, American Society for Microbiology, Washington, D.C.

2. Association of Official Analytical Chemists. *Official Methods of Analysis*^{sm}, AOAC, Washington, D.C.

3. APHA Technical Committee on Microbiological Methods for Foods. *Compendium of Methods for the Microbiological Examination of Foods*, APHA, Washington, D.C.

4. U.S. Food and Drug Administration. *Bacteriological Analytical Manual* . AOAC, Arlington, VA.

www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006949.htm

ATCC is a registered trademark of the American Type Culture Collection.

IFU-10544[B]

1430 West McCoy Lane, Santa Maria, CA 93455, USA
Phone: (805) 346-2766 ext. 5658
Fax: (805) 346-2760
Website: HardyDiagnostics.com
Email: TechnicalServices@HardyDiagnostics.com
Ordering Information

Distribution Centers:
California · Washington · Utah · Arizona · Texas · Ohio · New York · Florida · North Carolina

The Hardy Diagnostics manufacturing facility and quality management system is certified to ISO 13485.

HDQA 2207D [D]