IFU

Instructions for Use

CRITERION™ M-PA AGAR BASE

Cat. no. C7950	CRITERION™ m-PA Agar Base	76.8gm
Cat. no. C7951	CRITERION™ m-PA Agar Base	500gm
Cat. no. C7952	CRITERION™ m-PA Agar Base	2kg
Cat. no. C7953	CRITERION™ m-PA Agar Base	10kg
Cat. no. C7954	CRITERION™ m-PA Agar Base	50kg

INTENDED USE

Hardy Diagnostics CRITERION™ m-PA Agar Base is recommended for the cultivation and enumeration of *Pseudomonas aeruginosa* in water samples by membrane filtration.

This dehydrated culture medium is a raw material intended to be used in the making of prepared media products, which will require further processing, additional ingredients, or supplements.

SUMMARY

Recreational waters include freshwater swimming pools, whirlpools and naturally occurring fresh and marine water environments. Consequently, recreational waters may harbor harmful bacteria associated with health risks through body contact, ingestion, or inhalation.[4]

The most common sources of infectious agents in recreational waters include untreated or inadequately treated municipal and industrial effluents or sludge, sanitary wastes from coastal residences, fecal wastes from water crafts, drainage from sanitary landfills, storm water runoff and excretion from animals.[4] Additional sources of disease may come from bathers, through the shedding of microorganisms associated with the mouth, nose and skin, or from indigenous microorganisms found in the environment. Waterborne diseases associated with indigenous microorganisms include folliculitis, Pontiac fever, granulomas, primary amebic meningoencephalitis (PAM) and conjunctivitis. More common waterborne illnesses include dermatitis and otitis externa (swimmer's ear) frequently associated with the bacterium *Pseudomonas aeruginosa*.

P. aeruginosa can multiply in recreational waters that harbor sufficient nutrients; consequently, this bacterium may become an opportunistic pathogen when present in significant numbers. In addition, *P. aeruginosa* is a primary indicator of water contaminated by animal pets, rodents, storm water runoff, and human sources. Therefore, many different methods have been used to enumerate this microbe from water samples. The most-probable-number (MPN) procedures result in satisfactory recovery of this microorganism, but these methods are not suitable for large-volume water testing because they lack precision. The membrane filter (MF) techniques, however, eliminate these deficiencies.

Levin and Cabelli formulated m-PA Agar as a selective membrane filter medium for *P. aeruginosa*.[1] The addition of kanamycin, nalidixic acid, sulfapyridine and cycloheximide to CRITERION™ m-PA Agar Base makes the media moderately selective. This formulation is found in the *Standard Methods for the Examination of Water and*

Wastewater.

FORMULA*

Gram weight per liter:	40.0gm/L
Sodium Thiosulfate	6.8gm
Lysine	5.0gm
Sodium Chloride	5.0gm
Xylose	2.5gm
Yeast Extract	2.0gm
Sucrose	1.25gm
Lactose	1.25gm
Ferric Ammonium Citrate	800.0mg
Phenol Red	80.0mg
Agar	15.0gm

Final pH 7.1 +/- 0.2 at 25 degrees C.

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

Supplemental ingredients per liter:**	
Sulfapyridine	176.0mg
Cycloheximide	150.0mg
Nalidixic Acid	37.0mg
Kanamycin	8.5mg

** Supplemental ingredients are not provided.

STORAGE AND SHELF LIFE

Storage: Upon receipt store at 2-30 degrees C. away from direct light. Media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), contamination, or if the expiration date has passed. Product is light and temperature sensitive; protect from light, excessive heat, moisture, 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.

METHOD OF PREPARATION FOR DEHYDRATED CULTURE MEDIA

1. Suspend 38.4gm of the dehydrated culture media in 1 liter of distilled or deionized water. Stir to mix thoroughly.

2. Heat to boiling to dissolve completely. DO NOT OVERHEAT.

3. Sterilize in the autoclave at 121 degrees C. for 15 minutes.

4. Cool media to 45 degrees C. and aseptically add the following antibiotics per liter:

Sulfapyridine 176.0mg
Cycloheximide 150.0mg
Nalidixic Acid 37.0mg
Kanamycin 8.5mg

5. Sitr thoroughly to combine ingredients and aseptically pour to desired depth into sterile Petri plates.

PROCEDURE AND INTERPRETATION OF RESULTS

For information on procedures and interpretation of results, consult listed references or refer to the prepared media Instructions for Use (IFU) for Cat. No. G133.

LIMITATIONS

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

Some formulations may require a settling period before pH testing of the prepared medium. If the pH is tested immediately after preparation and is out of specification, retest the medium after 24 hours to obtain final pH results. Always take pH reading at room temperature.

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, other culture media, swabs, Skim Milk Agar (Cat. no. G138), applicator sticks, membrane filters, supplemental ingredients, antibiotics, incinerators, and incubators, etc., as well as serological and biochemical reagents, are not provided.

QUALITY CONTROL

The following organisms are routinely used for testing at Hardy Diagnostics:

Test Organisms	Inoculation Method*	Incubation			Results
		Time	Temperature	Atmosphere	
Pseudomonas aeruginosa ATCC® 27853	MF	18-24hr	35°C	Aerobic	Growth; no color change

USER QUALITY CONTROL

Users of dehydrated 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. In addition, refer to the following document "Finished Product Quality Control Procedures," for more information on QC or see the reference(s) for more specific information.

PHYSICAL APPEARANCE

CRITERION™ m-PA Agar Base powder should appear homogeneous, free-flowing, and pinkish-beige in color. The prepared media should appear clear, and pink to red in color.

REFERENCES

1. Levin and Cabelli. 1972. *Appl. Microbiol.*; 24:864.

2. Carson, Peterson, Favero, Doto, Collins, and Lecin. 1975. *Appl. Microbiol.*; 30:935.

3. Dutka and Kwan. 1977. *Appl. Environ. Microbiol.*; 33:240.

4. *Standard Methods for the Examination of Water and Waste Water*, 19th ed. 1995. APHA, Washington, D.C.

5. Brodsky and Ciebin. 1978. *Appl. Environ. Microbiol.*; 36:36

6. Estevez. 1984. Bacteriologic plate media: review of mechanisms of action. *Lab. Med.*; 15:258.

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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.