IFU

Instructions for Use

CRITERION™ VOGEL AND JOHNSON AGAR BASE

Cat. no. C7280	CRITERION™ Vogel and Johnson Agar Base	120gm
Cat. no. C7281	CRITERION™ Vogel and Johnson Agar Base	500gm
Cat. no. C7282	CRITERION™ Vogel and Johnson Agar Base	2kg
Cat. no. C7283	CRITERION™ Vogel and Johnson Agar Base	10kg
Cat. no. C7284	CRITERION™ Vogel and Johnson Agar Base	50kg

INTENDED USE

Hardy Diagnostics CRITERION™ Vogel and Johnson Agar Base, with added potassium tellurite, is a selective agar medium used for the detection of coagulase-positive, mannitol-positive *Staphylococcus aureus* strains.

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

Vogel and Johnson Agar was developed by Vogel and Johnson as a modification of the Tellurite Glycine Agar medium described by Zebovitz, Evans, and Niven.[7,8] Vogel and Johnson increased the mannitol content of the Tellurite Glycine Agar and added a pH indicator, phenol red. The pH indicator enables the detection of mannitol fermentation, a differentiating characteristic of most strains of *Staphylococcus aureus*. Coagulase-positive strains of *S. aureus* form characteristic black colonies on the medium due to the reduction of tellurite. Colonies of mannitol-fermenting strains will be surrounded by a yellow zone. The Association of Analytical Chemists (AOAC) has recommended the medium for detection of *S. aureus* in foods.[5]

Due to the high selectivity and sensitivity of the medium, Vogel and Johnson Agar may be used for the rapid detection of the *S. aureus* in clinical specimens when the detection of the etiologic agent is of singular importance. Other microorganisms are easily distinguished by their inability to produce black colonies. Selective agents incorporated into the medium are glycine and lithium chloride, which inhibit growth of most other organisms. Potassium tellurite is added to the prepared medium. The tellurite salt is an inhibitory agent and is easily reduced by coagulase-positive staphylococci, leaving a black precipitate in the colony.

FORMULA

Gram weight per liter:	60.0gm/L
Pancreatic Digest of Casein	10.0gm
Glycine	10.0gm

Mannitol	10.0gm
Yeast Extract	5.0gm
Dipotassium Phosphate	5.0gm
Lithium Chloride	5.0gm
Phenol Red	25.0mg
Agar	15.0gm

Final pH 7.2 +/- 0.2 at 25ºC.

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

STORAGE AND SHELF LIFE

Store the sealed bottle(s) containing dehydrated culture medium at 2-30ºC. Dehydrated culture medium is very hygroscopic. Keep lid tightly sealed. Protect dehydrated culture media from moisture and light. The dehydrated culture media should be discarded if it is not free-flowing or if the color has changed from its original light reddish-beige.

Store the prepared culture media at 2-8ºC.

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 60.0gm of the dehydrated culture media in 1 liter of distilled or deionized water.

2. Heat to boiling and mix to dissolve completely.

3. Sterilize in the autoclave at 121ºC. for 15 minutes.

4. Cool to 45-50ºC. and aseptically add 10ml of a 1% potassium tellurite solution or 2.9ml of a 3.5% potassium tellurite

solution.

5. Mix thoroughly before dispensing.

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. G193.

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.

If tellurite is reduced but mannitol is not fermented, the medium surrounding colonies may be a deeper red color. This occurs due to the utilization of proteins in the medium and results in an increase in alkalinity.[3]

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

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as autoclaves, incinerators, incubators, and potassium tellurite, etc. 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	
Staphylococcus aureus ATCC® 25923**	A	18-48hr	35°C	Aerobic	Growth; black colonies with yellow zones
Staphylococcus epidermidis ATCC® 12228	B	18-48hr	35°C	Aerobic	Growth, poor; gray-black colonies
Escherichia coli ATCC® 25922**	B	18-48hr	35°C	Aerobic	Partial to complete inhibition
Enterococcus faecalis ATCC® 29212	B	18-48hr	35°C	Aerobic	Partial to complete inhibition

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

** Recommended QC strains for User Quality Control according to the CLSI document M22 when applicable.

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™ Vogel and Johnson Agar Base powder should appear homogeneous, free-flowing, and light reddish-beige in color. The prepared media should appear slightly opalescent, and reddish-orange in color.

REFERENCES

1. Anderson, N.L., et al. *Cumitech 3B; Quality Systems in the Clinical Microbiology Laboratory*, Coordinating ed., A.S. Weissfeld. American Society for Microbiology, Washington, D.C.

2. Tille, P., et al. *Bailey and Scott's Diagnostic Microbiology,* C.V. Mosby Company, St. Louis, MO.

3. MacFaddin, J.F. 1985. *Media for Isolation, Cultivation, Identification, Maintenance of Bacteria,* Vol. I. Williams & Wilkins, Baltimore, MD.

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

5. The Official Compendia of Standards. 2008. *USP27-NF22*. United States Pharmacopeial Convention, Rockville, MD.

6. U.S. Food and Drug Administration. *Bacteriological Analytical Manual.* AOAC, Arlington, VA. http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006949.htm.

7. Vogel, R.A. and M.J. Johnson. 1960. *Public Health Lab*; 18:131.

8. Zebovitz, E., et al. 1955. *J. Bacteriol.*; 70:686.

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

HDQA 2207B [D]