

Instructions for Use

CASEIN AGAR

| | | |
|-------------------------------|-----------------------------------|---------------|
| Cat. no. G122 | Casein Agar, 15x100mm Plate, 18ml | 10 plates/bag |
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INTENDED USE

Hardy Diagnostics Casein Agar is recommended for use as a medium for the differentiation of aerobic actinomycetes based on casein proteolysis. Organisms that can hydrolyse casein, such as *Streptomyces*, *Pseudomonas*, and *Actinomadura* spp. will produce a clear halo in the surrounding medium.

SUMMARY

Casein Agar is a growth medium used for the detection of hydrolytic microorganisms. Proteins are made up of various chains of amino acids linked together by peptide bonds, and hydrolytic microorganisms have the ability to cleave peptide bonds. Casein Agar consists of agar supplemented with skim milk as the casein source. Clearing occurs around the colonies that hydrolyze casein. This medium is not recommended for the use as a general purpose medium as it supports the growth of a wide variety of organisms.

FORMULA

Ingredients per liter of deionized water:*

| | |
|-----------------------------|--------|
| Dry Milk, Instant Nonfat | 50.0gm |
| Pancreatic Digest of Casein | 5.0gm |
| Yeast Extract | 2.5gm |
| Glucose | 1.0gm |
| Agar | 12.5gm |

Final pH 6.8 +/- 0.3 at 25°C.

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

STORAGE AND SHELF LIFE

Storage: Upon receipt store at 2-8°C. away from direct light. Media should not be used if there are any signs 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 Precautions for blood. Do not ingest, inhale, or allow to come into contact with skin.

This product is for *in vitro* diagnostic 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

Specimen Collection: Infectious material should be submitted directly to the laboratory without delay and protected from excessive heat and cold. If there is to be a delay in processing, the specimen should be inoculated onto an appropriate transport media and refrigerated until inoculation. Consult listed references for information on specimen collection.⁽¹⁻⁷⁾

Select a colony and prepare a Gram-stained smear of the isolate and examine to confirm that the morphology is appropriate for the selected organism.

Directly inoculate Casein Agar by streaking a single line of the isolate to be tested onto the agar surface with a sterile inoculating loop.

Incubate the media at 35°C.

Casein Agar may need to be incubated for up to three weeks to allow positive hydrolytic reactions to develop. Examine plates at regular intervals for colony growth and hydrolytic reactions for the first 48-72 hours and periodically thereafter.

Decomposition of casein may be detected by observing clear zones in the white, opaque skim milk around the inoculum. Growth without clearing around the inoculum is considered a negative test result.

INTERPRETATION OF RESULTS

Positive Test - Clearing is observed around and/or beneath colony growth (hydrolysis).

Negative Test - No clearing is observed around and/or beneath the inoculum.

A positive reaction is indicated by a clearing in the media surrounding the colonies. *Pseudomonas aeruginosa* will hydrolyze casein and may produce a yellow to green diffusible pigment.⁽⁷⁾

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 | |
| <i>Pseudomonas aeruginosa</i> ATCC® 27853** | * | 24-48hr | 35°C | Aerobic | Growth; clear zones surrounding colonies, colonies may have greenish pigment |
| <i>Escherichia coli</i> ATCC® 25922** | * | 24-48hr | 35°C | Aerobic | Growth; no clear zones |

* 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

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

Casein Agar should appear opaque, with a precipitate, and white to off-white in color.



Pseudomonas aeruginosa (ATCC® 27853) growing on Casein Agar (Cat. no. G122). Incubated aerobically for 24 hours at 35°C.



Escherichia coli (ATCC® 25922) growing on Casein Agar (Cat. no. G122). Incubated aerobically for 24 hours at 35°C.

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. Jorgensen., et al. *Manual of Clinical Microbiology*, American Society for Microbiology, Washington, D.C.
3. Tille, P., et al. *Bailey and Scott's Diagnostic Microbiology*, C.V. Mosby Company, St. Louis, MO.
4. Isenberg, H.D. *Clinical Microbiology Procedures Handbook*, Vol. I, II & III. American Society for Microbiology, Washington, D.C.
5. Koneman, E.W., et al. *Color Atlas and Textbook of Diagnostic Microbiology*, J.B. Lippincott Company, Philadelphia, PA.
6. *Quality Assurance for Commercially Prepared Microbiological Culture Media*, M22. Clinical and Laboratory Standards Institute (CLSI - formerly NCCLS), Wayne, PA.
7. Eaton, A.D., Clesceri, L.S. and Greenberg, A.E. 1995. *Standard Methods for the Examination of Water and Wastewater*, 19th ed. APHA, Washington, D.C.

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

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