

PRODUCT INFORMATION AND QUALITY CONTROL SHEET

STANDARD METHODS AGAR

I. INTENDED USE

Standard Methods Agar is used for the enumeration of bacteria in water, wastewater, food and dairy products. This formula conforms to American Public Health Association¹ (APHA), and Association of Official Analytical Chemists² (AOAC).

II. SUMMARY AND EXPLANATION

Standard Methods Agar was developed by Buchbinder, Baris and Goldstein³ in 1953 at the request of the American Public Health Association. Buchbinder et al.⁴ recommended that a dehydrated culture medium be used in preparing the standard plate count medium rather than preparing the medium from ingredients.

Standard Methods Agar is also referred to as Plate Count Agar and Tryptone Glucose Yeast Agar. This formula is specified in standard method procedures.^{1,2,5-7}

III. PRINCIPLES OF THE PROCEDURE

Enzymatic Digest of Casein and Animal Tissue provide the carbon and nitrogen sources required for growth of a wide variety of organisms. Dextrose is a source of fermentable carbohydrate (energy source). Agar is the solidifying agent.

IV. TYPICAL FORMULA AND APPEARANCE

Appearance = white, opaque
(Approximate formula* per liter of processed water)

| | |
|-----------------------------------|--------|
| Enzymatic Digest of Casein | 5 g |
| Enzymatic Digest of Animal Tissue | 5 g |
| Dextrose | 40 g |
| Agar | 15.0 g |

*adjusted and/or supplemented to meet performance criteria.
Final pH: 5.6 ± 0.2 @ 25°C

V. PRECAUTIONS

This product is for IN VITRO diagnostic use only.

VI. STORAGE/SHELF LIFE

Media should be stored at 2-30°C in the unopened or resealed package protected from light.

VII. SPECIMEN COLLECTION

The quality of culture results depends primarily on the adequacy and condition of the specimen submitted for examination. Proper specimen collection techniques must be followed to ensure the most accurate culture results. Consult appropriate references for information about the processing and inoculation of specimens for fungal culture. Sterile swabs and collection containers should be used. Media should be inoculated promptly after specimen collection.

VIII. MATERIALS PROVIDED

Standard Methods Agar – Cat. No 1143 – Plates
Cat. No 1771 – Pour Tubes

IX. MATERIALS REQUIRED BUT NOT PROVIDED

Ancillary culture media, reagents and laboratory equipment as required.

X. PROCEDURE (Pour Tube Method)

1. Perform serial dilutions on samples (food, water) to be tested using the heterotrophic (standard) plates count method. Select dilutions that will yield plates with counts of 30 – 300 colonies.
2. Dispense a portion of each test dilution (e.g., 0.1ml, 1.0 ml) into separate test dilutions.
3. Add contents of one tube of tempered (45°C) Standard Methods Agar to petri dishes containing test dilutions.
4. Swirl the dishes to thoroughly mix the agar and test dilution.

5. Allow plates to cool and solidify.
6. Incubate at 32⁰ ± 1⁰C for 48 hours.

Plated Media Inoculation Method

1. Perform serial dilutions on samples (food, water) to be tested using the heterotrophic (standard) plates count method. Select dilutions that will yield plates with counts of 30 – 300 colonies.
2. Dispense a portion of each test dilution (e.g., 0.1ml, 1.0 ml) onto separate plates.
3. Spread inoculum evenly over agar surface with sterile swab or inoculating loop.
4. Incubate at 32⁰ ± 1⁰C for 48 hours.

XI. EXPECTED RESULTS

NCCLS CONTROL ORGANISMS (ATCC STRAINS)

| | |
|--|--------|
| <i>Escherichia coli</i> (ATCC 25922) | Growth |
| <i>Lactobacillus casei</i> (ATCC 7469) | Growth |
| <i>Staphylococcus aureus</i> (ATCC 25923) | Growth |

XII. LABORATORY RESULTS

Count colonies on all plates containing 30-300 colonies. Calculate bacterial count per milliliter of sample by multiplying the average number of colonies per plate by the reciprocal of the dilution used. Report the count as CFU/ml.

Identification of fungal organisms may be made on the basis of typical gross colony morphology, microscopic characteristics, and physiologic and pathologic characteristics. Additional test procedures should be used to confirm findings.

XIII. LIMITATIONS

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium. The ability to detect yeasts, molds and fungi by culture techniques can be affected by the following factors: improper specimen collection, storage and inoculation, improper culture incubation temperatures and atmospheres, improper length of culture incubation, and improper storage and handling of culture media.

XIV. REFERENCES

1. Marshall, R.T. (ed.). 1993. Standard methods for the microbiological examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
2. Cunniff, P. (ed.). 1995. Official methods of analysis AOAC International, 16th ed. AOAC International, Arlington, VA.
3. Buchbinder, L., Y. Baris, and L. Goldstein. 1953. Further studies on new milk-free media for the standard plate count of dairy products. Am J. Public Health 43:869-872.
4. Buchbinder, L., Y. Baris, E. Alff, E. Reynolds, E. Dillon, V. Pessin, L. Pincus, and A. Strauss. 1951. Studies to formulate new media for the standard plate count of dairy products. Pub. Health Rep. 66:327-340.
5. Vanderzant, C., and D.F. Splittstoesser (eds.). 1992. Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.
6. Greenberg, A.E., L.S. Clesceri, and A.D., Eaton (eds.). 1992. Standard methods for the examination of water and wastewater, 18th ed. American Public Health Association, Washington, D.C.
7. U.S. Food and Drug Administration. Bacteriological analytical manual, 8th ed., AOAC International, Gaithersburg, MD.

USER QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND INFORMATION

HealthLink recommends that the following quality assurance and quality control procedures be performed on each batch of product.

I. QUALITY ASSURANCE

The following quality assurance procedures must be performed to assure the product will perform according to its intended use within the assigned expiry date:

If stored in refrigeration - daily document that refrigerator maintains temperature within 2-8^oC.

II. QUALITY CONTROL

The following incoming inspection procedures must be performed for each batch (batch = same lot, same shipment) of culture media received in the laboratory:

Inspect plates according to instructions contained in the Section VI "STORAGE/SHELF LIFE"

Note: Notify Technical Service immediately if media does not meet the inspection criteria.

TECHNICAL SERVICE

HealthLink provides a toll free technical service line (1-800-638-2625) to assist with product usage. To have technical questions answered; please call between the hours of 9:00 am to 5:00 pm EST.

HealthLink
3611 St. Johns Bluff Rd. So. Ste. 1
Jacksonville, FL 32224

1-800-638-2625

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Product No. 1143 – 10 plates per pkg.
1771 (pour tubes) – 10 tubes/box

Rev. No. New