



QUALITY CONTROL PROCEDURES

I INTRODUCTION

Jordan's Tartrate Agar is a medium which aids in the differentiation of gram-negative enteric microorganisms on the basis of tartrate utilization.

II PERFORMANCE TEST PROCEDURE

- Inoculate representative samples with the cultures listed below.
 - Using an inoculating needle, stab deep into the agar column using 10^{-1} dilutions of 18- to 24-h **Trypticase™** Soy Broth cultures.
 - Incubate tubes with loosened caps at $35 \pm 2^{\circ}\text{C}$ in an aerobic atmosphere.
- Examine tubes after 18–24 and 42–48 h for growth and reactions.

3. Expected Results

Organisms	ATCC™	Recovery	Tartrate Reaction
* <i>Salmonella choleraesuis</i> subsp. <i>choleraesuis</i> serotype Enteritidis	13076	Growth	Yellow (acid)
* <i>Salmonella choleraesuis</i> subsp. <i>choleraesuis</i> serotype Paratyphi A	9150	Growth	No color change

*Recommended organism strain for User Quality Control.

III ADDITIONAL QUALITY CONTROL

- Examine tubes as described under "Product Deterioration."
- Visually examine representative tubes to assure that any existing physical defects will not interfere with use.
- Incubate uninoculated representative tubes at $20\text{--}25^{\circ}\text{C}$ and $30\text{--}35^{\circ}\text{C}$ and examine after 7 days for microbial contamination.

PRODUCT INFORMATION

IV INTENDED USE

Jordan's Tartrate Agar is used as an aid in the identification of members of the *Enterobacteriaceae* on the basis of tartrate utilization.

V SUMMARY AND EXPLANATION

Jordan's Tartrate Agar was formulated by Jordan and Harmon for the detection of sodium tartrate fermentation, a test used to differentiate *Salmonella typhi* (now *S. choleraesuis* subsp. *choleraesuis* serotype Typhi) and *S. schottmuelleri* (now *S. choleraesuis* subsp. *choleraesuis* serotype Paratyphi B).¹ Edwards and Ewing later reported tartrate utilization useful for the differentiation of monophasic and diphasic "Arizona" (now *S. choleraesuis* subsp. *arizonae*) cultures.²

Jordan's Tartrate Agar is particularly helpful in the differentiation of *S. choleraesuis* subsp. *choleraesuis* serotype Paratyphi A, which does not utilize tartrate, from other strains of salmonellae most of which are capable of utilizing tartrate.^{3,4}

VI PRINCIPLES OF THE PROCEDURE

Utilization of the organic salt, sodium tartrate, may be used to differentiate enteric bacilli. Tartrate fermentation acidifies the medium and is indicated by the development of a yellow color in the lower portion of the tube. Phenol red is incorporated as an indicator of acid production.

VII REAGENTS

Jordan's Tartrate Agar

Approximate Formula* Per Liter Purified Water

Pancreatic Digest of Casein	10.0	g
Sodium Potassium Tartrate	10.0	g
Sodium Chloride	5.0	g
Agar	15.0	g
Phenol Red	0.024	g

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

Warnings and Precautions: For *in vitro* Diagnostic Use.

Tubes with tight caps should be opened carefully to avoid injury due to breakage of glass.

Observe aseptic techniques and established precautions against microbiological hazards throughout all procedures. After use, prepared tubes, specimen containers and other contaminated materials must be sterilized by autoclaving before discarding.

Storage Instructions: On receipt, store tubes in the dark at $2\text{--}8^{\circ}\text{C}$. Avoid freezing and overheating. Do not open until ready to use. Minimize exposure to light. Tubed media stored as labeled until just prior to use may be inoculated up to the expiration date and incubated for the recommended incubation times. Allow the medium to warm to room temperature before inoculation.

Product Deterioration: Do not use tubes if they show evidence of microbial contamination, discoloration, drying or other signs of deterioration.

VIII SPECIMEN COLLECTION AND HANDLING

Specimens suitable for culture may be handled using various techniques. For detailed information, consult appropriate texts.^{5,6} Specimens should be obtained before antimicrobial agents have been administered. Provision must be made for prompt delivery to the laboratory.

IX PROCEDURE

Material Provided: Jordan's Tartrate Agar Deep

Materials Required But Not Provided: Ancillary culture media, reagents, quality control organisms and laboratory equipment as required.

Test Procedure: Observe aseptic techniques.

Prior to inoculation of Jordan's Tartrate Agar, the organism to be tested must have been previously isolated on some other suitable solid medium. The use of a pure culture is essential to correct performance of the test.

Using a sterile inoculating needle, pick the center of a well-isolated colony from a young culture and inoculate the medium by stabbing deeply into the column of medium. Replace the cap loosely. Incubate the tubes at $35 \pm 2^\circ\text{C}$ for 24–48 h in an aerobic atmosphere.

User Quality Control: See "Quality Control Procedures."

Quality Control requirements must be performed in accordance with applicable local, state and/or federal regulations or accreditation requirements and your laboratory's standard Quality Control procedures. It is recommended that the user refer to pertinent CLSI (formerly NCCLS) guidance and CLIA regulations for appropriate Quality Control practices.

X RESULTS

The test is positive if the lower portion of the medium has turned yellow. If there is no change in the color of the medium, the test is negative.

XI LIMITATIONS OF THE PROCEDURE

For identification, organisms must be in pure culture.

Tartrate utilization is an aid to identification and is not a confirmatory test. Complete identification should include determination of Gram reaction, morphology, biochemical and serological tests. Appropriate texts should be consulted for additional information.^{3,4,7}

XII PERFORMANCE CHARACTERISTICS


Prior to release, all lots of Jordan's Tartrate Agar Deep are tested for performance characteristics. Representative samples of the lot are inoculated directly by stabbing the medium with 10^{-1} dilutions of 24-h **Trypticase** Soy Broth cultures of *Salmonella choleraesuis* subsp. *choleraesuis* serotype Enteritidis ATCC 13076 and *S. choleraesuis* subsp. *choleraesuis* serotype Paratyphi A ATCC 9150. Tubes are incubated with loose caps at $35\text{--}37^\circ\text{C}$ for 2 days in an aerobic atmosphere. Acid (color change from red to yellow) is observed with *Salmonella* serotype Enteritidis and no color reaction, or red color, with *Salmonella* serotype Paratyphi A.


XIII AVAILABILITY

Cat. No.	Description
221889	BBL™ Jordan's Tartrate Agar Deep, 5 mL, Pkg. of 10 size K tubes

XIV REFERENCES

1. Jordan, E.O., and P.H. Harmon. 1928. New differential medium for paratyphoid group. *J. Infect. Dis.* 42:238-241.
2. Edwards, P.R., and W.H. Ewing. 1955. Identification of *Enterobacteriaceae*. Burgess Publishing Company, Minneapolis.
3. Ewing, W.H. 1986. Edwards and Ewing's identification of *Enterobacteriaceae*, 4th ed. Elsevier Science Publishing Co., Inc., New York.
4. Farmer, J.J., III. 1999. *Enterobacteriaceae*: introduction and identification, p. 442-458. In P.R. Murray, E.J. Baron, M.A. Tenover, and R.H. Tenover (ed.), *Manual of clinical microbiology*, 7th ed. American Society for Microbiology, Washington, D.C.
5. Isenberg, H.D., F.D. Schoenkecht, and A. vonGraevenitz. 1979. Cumitech 9, Collection and processing of bacteriological specimens. Coord.ed. S.J. Rubin. American Society for Microbiology, Washington, D.C.
6. Miller, J.M., and H.T. Holmes. 1999. Specimen collection, transport and storage, p.33-63. In P.R. Murray, E.J. Baron, M.A. Tenover, and R.H. Tenover (ed.), *Manual of clinical microbiology*, 7th ed. American Society for Microbiology, Washington, D.C.
7. Holt, J.G., N.R. Krieg, P.H.A. Sneath, J.T. Staley, and S.T. Williams (ed.). 1994. *Bergey's Manual™ of determinative bacteriology*, 9th ed. Williams & Wilkins, Baltimore.

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