

Technical Data

DNase Test Agar Base w/o DNA

DNase Test Agar Base with DNA Supplement is recommended for the detection of deoxyribonuclease activity of bacteria and fungi particularly Staphylococci.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Papaic digest of soyabean meal	5.000
Sodium chloride	5.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40.0 grams in 1000 ml distilled water. Add 2 grams of DNA, 0.025 grams Bromothymol blue and 10 grams of mannitol. Heat, to boiling, to dissolve the medium completely. Sterilize by autoclaving at 12 to 15 lbs pressure (118°C to 121°C) for 15 minutes. Cool to 45°C and pour into sterile Petri plates.

Principle And Interpretation

DNase Test Agar Base is used for detecting deoxyribonuclease activity of bacteria and fungi and particularly for identification of pathogenic Staphylococci. With added toluidine blue, it is used in differentiation and identification of nonpigmented *Serratia* species isolated from clinical sources that might be improperly identified as *Enterobacter* and *Klebsiella* species. DNase activity was observed by Weckman and Catlin (1) in Micrococci and found the correlation with coagulase activity as coagulase positive species were DNase positive. Di Salvo (2) confirmed the results of Weckman and Catlin and observed accurate correlation of DNase and coagulase activity. In his experiment Di Salvo incorporated DNA and calcium chloride to activate DNase enzyme. Schreier modified DNase medium by adding toluidine blue (3). This modified medium achieved faster identification of *Serratia marcescens* and could differentiate *Serratia* from other members of the *Enterobacteriaceae*. DNase Test Agar Base without DNA can be used to detect DNase activity as well as mannitol fermentation by the addition of mannitol and a pH indicator dye i.e. bromothymol blue (5).

Casein enzymic hydrolysate or papaic digest of soyabean meal provides essential nutrients. The depolymerization of the DNA (DNase activity) may be detected by flooding the surface of the medium with 1 N HCl (4) and observing for clear zones around the colonies on the medium (with added DNA and mannitol and no bromothymol blue). In the absence of DNase activity, cloudy precipitate is formed due to reaction of HCl with nucleic acids. When bromothymol blue is used, yellow zones are formed.

Further confirmatory tests for the identification should be carried out.

Quality Control

Appearance Cream to yellow homogeneous free flowing powder Gelling Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium After addition of Bromothymol blue : Blue coloured, clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 5.2% w/v aqueous solution at 25°C. pH : 7.3 ± 0.2

pH 7.10-7.50

Cultural Response

Please refer disclaimer Overleaf.

M741

M741: Cultural characteristics observed with added 2 grams of DNA, 0.025 grams Bromothymol blue and 10 grams of mannitol after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	D-Nase Activity	
Serratia marcescens ATCC 8100	50-100	luxuriant	positive reaction ,change in colour from green to yellow around the growth	
Staphylococcus aureus ATCC 25923	50-100	luxuriant	positive reaction, change in colour from green to yellow around the growth	
Staphylococcus epidermidis ATCC 12228	50-100	luxuriant	negative reaction	
Streptococcus pyogenes ATCC 19615	50-100	luxuriant	positive reaction,change in colour from green to yellow around the growth	

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

- 1. Weckman and Catlin, 1957, J. Bact., 73:747.
- 2. Di Salvo, 1958, Med. Tech. Bull., U.S. Armed Forces Med. J., 9:191.
- 3. Schreir, 1969, Am. J. Clin. Pathol., 51:711.
- 4. Streitfeld, Hoffman and Janklow, 1962, J. Bact., 84:77.
- 5. MacFaddin J. F., 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1. Williams

& Wilkins, Baltimore, Md.

Revision : 2 / 2015

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia[™] publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia[™] Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.

HiMedia Laboratories Pvt. Ltd. A-516, Swastik Disha Business Park, Via Vadhani Ind. Est., LBS Marg, Mumbai-400086, India. Customer care No.: 022-6147 1919 Email: techhelp@himedialabs.com