Also known as
Dnase Test Agar; Deoxyribonuclease Test Agar; Deoxyribonucleic Acid Agar; DNA Agar

Specification
Solid culture medium for the determination of the deoxyribonuclease activity of microorganisms, especially staphylococci and *Serratia spp.*

Formula * in g/L
Tryptose..... 20.00
DNA 2.00
Sodium chloride..... 5.00
Agar.....15.00

Final pH 7,3 ±0,2 at 25 ºC

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

Directions
Suspend 42 g of powder in 1 L of distilled water and bring to the boil stirring constantly. Distribute into suitable containers and sterilize in the autoclave at 121°C for 15 minutes. Cool to 50°C and pour into the Petri dishes.

Description
Jeffries, Holtman and Guse (1957) incorporated DNA into a general medium with agar to study bacterial and fungal DNase production. Microorganisms that produce DNase cleave DNA, reducing it to nucleotide fragments. This reaction is observed by the appearance of a clear zone surrounding the growth, the rest of the plate remains turbid. Hydrochloric acid reacts with DNA producing a white precipitates that makes the medium turbid, and it does not react with nucleotide fragments (clear zones).
DiSalvo (1958) observed that there is a correlation between coagulase production and DNase activity, thus DNase Medium may be used as a laboratory test to diagnose pathogenic staphylococci.
Mannitol fermentation may be simultaneously determined if 10 g of mannitol and 0,025 g of phenol red are added to 1 L of DNase Agar, before sterilization. Positive results in both tests will determine with more certainty that the microorganism is a pathogenic *Staphylococcus aureus*. This medium is also useful to identify *Serratia marcescens* in clinical specimens, since it is a good DNase producer. Smith *et al.* (1969) modified the medium by adding toluidine blue and crystal violet, and stated that Gram negative DNase producing bacilli that grew on this medium may be described as *Serratia* species.

Technique
DNase Agar plates are inoculated with the microorganism to be studied by streaking a thick line of inoculum across the plate or by spotting onto the plate. Plates are incubated at 35-37°C for an 18-24 hour period.
To read, flood the plates with 1N hydrochloric acid and observe if there are any clear or transparent zones surrounding the streak. If the plate becomes totally turbid without any clear zone then the test is negative; however if any clear zones develop around the growth, the test is described as positive.

Quality control
Incubation temperature: 35-37 ºC **Incubation time:** 18-24 h
Inoculum: Streak isolation. To read, flood the plates with 1N ClH.

Microorganism	Growth	Remarks
Pseudomonas aeruginosa ATCC® 27853	Good	DNase (-)
Serratia marcescens ATCC® 13880	Good	DNase (+)
Staphylococcus aureus ATCC® 6538	Good	DNase (+)
Staphylococcus aureus ATCC® 25923	Good	DNase (+)
Escherichia coli ATCC® 25922	Good	DNase (-)

References
· DISALVO, J.W. (1958) Desoxyrribonuclease and Coagulase Activity of Micrococci. Med. Tech. Bull. U.S. Armed Forces. Med. J. 9:191.
· JEFFRIES, C.D., D.F. HOLTMAN & D.G. GUSE (1957) Rapid Method for Determining the Activity of Microorganisms on NucleicAcids. J. Bacteriol. 73:590-591.
· SMITH, P.B., G.A. HANCOCK & D.L. RHODEN (1969) Improved medium for detecting deoxyrribonuclease-producing bacteria. Appl. Microbiol. 18:991-993.

Storage
For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).