DNAse Test Agar (Deoxyribonuclease Activity)

Cat. 1028

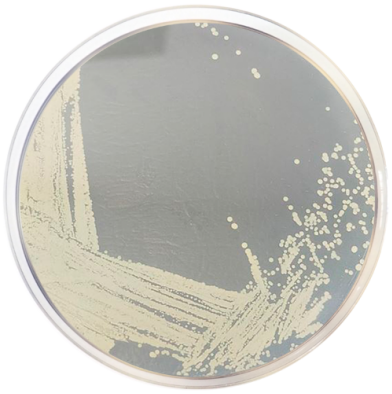
For the detection of deoxyribonuclease activity to aid in the identification of bacteria isolation from clinical specimens.

Practical information

Aplications	Categories
Differentiation	General use

Industry: Clinical

CE
IVD



Principles and uses

DNAse Test Agar (Deoxyribonuclease Activity) is used to differentiate microorganisms using correlation between coagulase positive and DNase activity. This differential medium is especially recommended for the identification of pathogenic staphylococci.

Casein peptone and soy peptone provide nitrogen, vitamins, minerals and amino acids essential for growth. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Deoxyribonucleic acid enables the detection of DNase that depolymerize DNA. Bacteriological agar is the solidifying agent.

Formula in g/L

Bacteriological agar	15	Casein peptone	15
Deoxyribonucleic acid	2	Sodium chloride	5
Soy peptone	5		

Preparation

Suspend 42 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. Cool to 45-50 ºC, mix well and dispense into plates.

Instructions for use

For clinical diagnosis, the type of sample is colonies isolated from any clinical sample.
- Inoculate the sample to be analyzed by a 10 µl seeding loop on the surface of the agar. 4 to 5 different samples can be inoculated simultaneously on the same plate.
- Incubate for 18-24 hours at 35±2 ºC.
- After a satisfactory growth, add a drop of HCl 1N or a few drops of 0,1% toluidine blue solution. With some strains, it is necessary to increase the concentration of HCl to 2N to obtain a good positive reaction.
- In the presence of dilute HCl, the DNA of the medium polymerizes and forms an opaque precipitate. The colonies of microorganisms capable of synthesizing deoxyribonucleases, appear surrounded by a transparent zone or halo that contains fractions of soluble nucleotides coming from the degradation of DNA, which are not precipitated by HCl. If desired, add 0,1% toluidine blue instead of HCl.

Results in the presence of HCl:
- DNase (+): transparent zone around the growth area.
- DNase (-): Absence of transparent zone around the growth area.

Results in the presence of toluidine blue:
- DNase (+): pink halo around the growth area. The rest of the plate remains blue.
- DNase (-): absence of pink halo around the growth area.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	Amber, slightly opalescent	7,3±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

Microorganisms	Specification	Characteristic reaction
Staphylococcus epidermidis ATCC 12228	Good growth	DNase activity (-), no halo
Serratia marcencens ATCC 14756	Good growth	DNase activity (+), with halo
Staphylococcus aureus ATCC 25923	Good growth	DNase activity (+), with halo
Staphylococcus aureus ATCC 6538	Good growth	DNase activity (+), with halo

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Blair E.B. Emerson, J.S. and Tull, S.C. Am. J.Clin.Poth, 47:30-39, 1957. Disalvo Med. Tech. Bull. 9:191. 1958.
Weckman and Catting J. Bact. 73: 747. 1957.