DNase Test HiVeg™ Agar Base w/o DNA MV741

DNase Test HiVeg Agar (w/o DNA) with DNA Supplement is recommended for detection of deoxyribonuclease activity of bacteria and fungi particularly *Staphylococci*.

Composition ** :

Ingredients	Grams/Litre
HiVeg hydrolysate	15.0
Papaic digest of soyabean meal	5.0
Sodium chloride	5.0
Agar	15.0

Final pH (at 25°C) 7.3 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 40 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 12-15 lbs pressure (118 -121°C) for 15 minutes. Cool and pour into plates.

Principle and Interpretation :

This medium is prepared by using HiVeg hydrolysate which is free from BSE/TSE risks. DNase Test HiVeg Agar Base is the modification of DNase Test agar base which is used for detecting deoxyribonuclease activity of bacteria and fungi and particularly for identification of pathogenic *Staphylococci*. 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. DNase medium was modified by adding toluidine blue by Schreier. DNase Test HiVeg Agar Base w/o DNA is modified by adding bromothymol blue instead of toluidine blue (3). This modified medium achieved faster identification of *Serratia marcescens* and could differentiate *Serratia* from other members of the *Enterobacteriaceae*. HiVeg hydrolysate and papaic digest of soyabean meal provide essential nutrients. DNase depolymerizes the DNA resulting in the formation of a clear zone around the microbial growth which is visualized by flooding the plate with hydrochloric acid (4). When bromothymol blue is added to the medium itself, DNase activity results in the production of a colourless to yellow reaction. Further confirmatory tests for identification should be carried out.

Quality Control :

Appearance of powder

Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV741 HiVeg hydrolysate	**M741** Casein enzymic hydrolysate

Recommended for	:	Detection of deoxyribonuclease activity of bacteria and fungi
Reconstitution	:	40.0 g/l
Quantity on preparation (500g)	:	12.5 L
(100g)	:	2.5 L
pH (25°C)	:	7.3 ± 0.2
Supplement	:	DNA, Bromothymol blue & Mannitol
Sterilization	:	118°C-121°C / 15 minutes

Storage : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity

Light amber coloured, clear to slightly opalescent gel forms in petri plates. With added 2 grams of DNA, 0.025 grams of Bromothymol blue and 10 grams of mannitol, the gel formed in petri plates is yellowish green coloured.

Reaction

Reaction of 4.0% w/v aqueous solution is pH 7.3 ±0.2 at 25°C.

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18- 24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	DNase Activity*
Staphylococcus aureus (25923)	10^2-10^3	luxuriant	+
Staphylococcus epidermidis (12228)	10^2-10^3	luxuriant	—
Streptococcus pyogenes (19615)	10^2-10^3	luxuriant	+
Serratia marcescens (8100)	10^2-10^3	luxuriant	+

Key : * = DNase Test HiVeg Agar with Bromothymol blue
+ = yellow zone surrounding growth
— = no colour change surrounding growth

References :

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.