

## DNase Test Agar (i23057)

For detecting microbial DNase (deoxyribonuclease) and for identifying microorganisms, especially DNase-positive *staphylococci*.

Industry: Clinical

## Principles & Uses

DNase Test Agar is employed for distinguishing microorganisms, particularly pathogenic *staphylococci*, based on their DNase activity, often used alongside coagulase testing. Tryptose provide essential nutrients, while sodium chloride maintains osmotic balance. DNA serves as a substrate to detect DNase activity and agar solidifies the medium.

When DNase-positive microorganisms grow on this medium, they hydrolyze the DNA, creating clear zones around their colonies. Toluidine blue (0.1 gr/L) can be added instead of flooding plate with HCL

After growth, flooding the medium with 1 N HCl causes non-hydrolyzed DNA to precipitate (turbidity), and DNase-positive colonies exhibit clear zones. Alternatively, toluidine blue, crystal violet, or methyl green can be used as indicators instead of flooding with HCL as an indicator to expedite the identification of *Serratia* species, distinguishing them from *Enterobacter* and *Klebsiella* species.

## Composition (gr/L)

Tryptose 20, Sodium chloride 5, Deoxyribonucleic acid 2, Agar 15.

Final pH at 25°C 7.3 ± 0.2

## Preparation from dehydrated Powder

Suspend 42 g of the powder in 1 Lite of purified water. Mix thoroughly. Autoclave at 121°C for 15 minutes.

## Quality Control

Dehydrated Appearance: Light-beige, free-flowing, homogeneous.

Prepared Appearance: Light to medium amber, slightly

opalescent, may have a slight precipitate.

Reaction of 4.2% Solution at 25°C: pH 7.3 ± 0.2

## Cultural Response

Medium was prepared and inoculated with organisms listed below. Cultural response was observed after up to 48 hours of incubation at 35 ± 2°C. After incubation carefully flood the surface of the plates with 1 N hydrochloric acid and check the zone of colonies.

Organism (ATCC*)	Recovery	Reaction
<i>Serratia marcescens</i> (8100)	Good	+
<i>Staphylococcus epidermidis</i> (12228)	Good	-
<i>Staphylococcus aureus</i> (25923)	Good	+

\*ATCC is a registered trade mark of the American Type Culture Collection.



*S. aureus* exhibits positive DNase activity, indicated by a clear zone around it (above). *S. epidermidis* displays negative DNase activity, with no clear zone (below).

## Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.