

Staphylococcus Agar 110 medium

Staphylococcus Agar medium is used as a selective medium for the isolation and testing of pathogenic Staphylococci.

REF: BS.1/NZ01.100.0100	100 Gram	REF: BS.1/NZ01.250.0250	250 Gram
REF: BS.1/NZ01.500.0500	500 Gram		

PRINCIPLE AND INTERPERTATION :

Staphylococci are widespread in nature though they are mainly found living on the skin, skin glands and mucous membrane of mammals and birds. These organisms are also associated with staphylococcal food poisoning. Staphylococcus Agar No. 110 (1,2,3) also known as Stone Gelatin Agar (4) is used for the selective isolation of pathogenic Staphylococci on the basis of pigment production, mannitol fermentation and gelatin liquefaction. These properties are few of the characteristics of pathogenic Staphylococci (5, 6). Staphylococcus Agar No. 110 is recommended by APHA (2) and AOAC (1). The medium can be used with Egg Yolk Emulsion (FD045) to study the egg yolk reactions (9). Tryptone and yeast extract serve as sources of carbon, nitrogen and other essential nutrients and growth factors including vitamins. D-Mannitol is the fermentable carbohydrate with lactose being an additional source of carbon. Sodium chloride maintains the osmotic equilibrium while phosphate buffers the medium. Gelatin serves as the substrate for gelatin liquefaction. Mannitol fermentation can be visualized as yellow colouration by addition of a few drops of bromothymol blue to the areas of the plates where colonies have been removed. Gelatin liquefaction can be seen when the plates are flooded with a saturated aqueous solution of ammonium sulphate. On incubation at 35-37°C for 10 minutes, clear zone are observed. Enterococcus faecalis may grow on this medium as small colonies with slight mannitol fermentation (1).

MEDIA COMPOSITION

Item	Formula per liter of medium
Tryptone	10.00 gm
Yeast extract	2.500 gm
Lactose	2.000 gm
Gelatin	30.000 gm
Sodium chloride	75.000 gm
Dipotassium hydrogen phosphate	5.000 gm
D-Mannitol	10.000 gm
Agar	15.000 gm

Final pH (at 25°C) 7.0 ± 0.2 ** Formula adjusted, standardized to suit performance parameters.

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or

special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the Staphylococcus 110 material safety data sheet.

STORAGE AND STABILITY

BioScien Staphylococcus 110 medium Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

PREPARATION

Suspend 149.5 grams in 1000 ml of purified/distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Resuspend the precipitate by gentle agitation to avoid bubbles and pour the plates while the medium is hot. Alternatively, cool the medium to 45 - 50°C and add blood or egg yolk if desired. This medium may also be used without sterilization; it should be boiled for 5 minutes and used at once.

Deterioration

The color of **BioScie** Staphylococcus Agar medium media is Cream to yellow homogeneous free flowing powder. Prepared Medium of Staphylococcus Agar medium is Light amber coloured clear to slightly opalescent gel forms in Petri plates. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri dishes
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after an incubation at 35-37°C for 48 hours.

- 2) Bacteriological Analytical Manual, 5th Ed., 1978, AOAC International, Gaithersburg, Md.
- 3) Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed.

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact **BioScien** technical support.

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after an incubation at 35-37°C for 48 hours. (Mannitol fermentation - on addition of BTB; Gelatinase production : flooding plate with standard aqueous solution of ammonium

 For in-vitro diagnostic use	 Number of <n> test in the pack
 Batch Code/Lot number	 Caution
 Catalogue Number	 Do not use if package is damaged
 Temperature Limitation	 Consult Instruction for use
 Expiration Date	
 Manufactured by	

Organisms (ATCC)	Growth	Mannitol fermentation	Pigment Production	Gelatinase production
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	Good-luxuriant	positive reaction	Positive	positive reaction
Staphylococcus epidermidis ATCC 12228 (00036*)	Good-luxuriant	variable reaction	Negative	positive reaction
Enterococcus faecalis ATCC 29212 (00087*)	Fair-good	slight reaction	Negative	variable reaction
Escherichia coli ATCC 25922 (00013*)	Inhibited			

sulphate)

- Washington DC:APHA Press; 2023. Carter C. H., 1960, J. Bacteriol., 79:753.
- 4) Chapman G. H., 1946, J. Bacteriol., 51:409.
- 5) Chapman G. H., 1947, J. Bacteriol., 53:504.
- 6) Chapman G. H., 1952, J. Bacteriol., 63:147.
- 7) Chapman G. H., Lieb C. W. and Cumco L. G., 1937, Food Research 2., 349-367

REFERENCE

- 1) Association of Official Analytical Chemists (AOAC),