

VOGEL-JOHNSON AGAR

CAT Nº: 1079

For the selective isolation of *Staphylococcus aureus* from clinical samples and foods

FORMULA IN g/l

Glycine	10.00	Lithium Chloride	5.00
D-Mannitol	10.00	Yeast Extract	5.00
Tryptone	10.00	Phenol Red	0.025
Dipotassium Phosphate	5.00	Bacteriological Agar	15.00

Final pH 7.2 ± 0.2 at 25°C

PREPARATION

Suspend 60 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°C for 15 minutes. Cool to 45-50°C and aseptically add 6 ml of 3.5% Potassium Tellurite (Cat. 5208). Homogenize gently and dispense into Petri dishes. To prepare a less selective medium, only add 3 ml of 3.5% Potassium Tellurite. The prepared medium should be stored at 8-15°C. The color is red, slightly opalescent.

The dehydrated medium should be homogeneous, free-flowing and pink in color. If there are any physical changes, discard the medium.

USES

VOGEL-JOHNSON AGAR BASE is a selective and differential medium used for the early detection of *Staphylococcus aureus* by identifying the coagulase-positive and mannitol-fermenting strains. The medium is excellent for the detection of staphylococci carriers as well as studies of sanitary concern.

S. aureus reduce the potassium tellurite to the metal tellurium and result in the growth of black colonies. The fermentation of mannitol is indicated by the yellow zones around the black colonies and changes the red color of the medium to yellow. Tryptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group. Mannitol is the fermentable carbohydrate providing carbon and energy. Potassium tellurite, Lithium chloride and the high Glycine concentration inhibit most microorganisms other than staphylococci. Phenol red is the pH indicator. Dipotassium phosphate is a buffer. Bacteriological agar is the solidifying agent.

Vogel-Johnson Agar plates can be streaked heavily with a swab and incubated at 35 ± 2°C for 24 – 48 hours. Look for black colonies surrounded by a yellow zone. During the first 24 hours the majority of microorganisms, except for coagulase-positive staphylococci are totally or markedly inhibited. At 48 hours many coagulase-negative staphylococci, mannitol-positive and mannitol-negative, begin to appear. *Staphylococcus epidermidis*, almost always inhibited early, forms small grayish-black colonies without yellow zones. Coagulase-positive staphylococci form black colonies on the red medium. If they ferment mannitol, the colonies are surrounded by a yellow zone. Mannitol-negative organisms do not change the red color of the medium.

MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures, with the additive added, after incubation at a temperature of 35 ± 2°C and observed after 24- 48°C hours.

Microorganisms	Growth	Colony Color
<i>Escherichia coli</i> ATCC 25922	Inhibited	
<i>Proteus mirabilis</i> ATCC 25933	Negative to poor	Black
<i>Staphylococcus aureus</i> ATCC 25923	Good	Black with yellow halos
<i>Staphylococcus epidermidis</i> ATCC 12228	Moderate	Translucid to black

BIBLIOGRAPHY

United States Pharmacopoeia XXI (1985) Microbial limit tests. Rockville Md. Vogel R.A. Jonhson, M. 3. (1961) Pub. Hlth. Lab, 18, 131.
Zebovitz E. Evans, J.B. add Niven C.P. (1955) J. Bact. 70. 687.

STORAGE

Once opened keep powdered medium closed to avoid hydration.

