Bordet-Gengou Agar Base

Cat. 1107

For the detection and isolation of Bordetella pertussis and Bordetella parapertussis from clinical samples

Practical information

Aplications	Categories
Selective isolation	Bordetella
Detection	Bordetella

Industry: Clinical

CE IVD

Principles and uses

Bordet-Gengou Agar Base is used with the addition of horse blood for isolating Bordetella pertussis and other Bordetella species.

The genus Bordetella consists of 4 species, all being respiratory pathogens: Bordetella pertussis, B. parapertussis, B. bronchiseptica and B. avium.

Potato infusion and Proteose peptone provide nitrogen, vitamins, minerals and amino acids essential for growth. Glycerol provides carbon. Sodium chloride supplies essential electrolytes for transport and osmotic balance, and Bacteriological agar is the solidifying agent. The addition of blood provides extra growth nutrients for Bordetella species. Starch from the potato infusion absorbs fatty acids from nasal secretions on cotton swabs which inhibit growth of B. pertussis.

Formula in g/L

Bacteriological agar	16	Infusion from potatoes	4,5
Sodium chloride	5,5	Proteose peptone	10

Preparation

Suspend 36 grams of the medium in one liter of distilled water with 10 ml of glycerol. Allow to stand for 5 minutes and mix well until a uniform suspension is obtained. 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 and aseptically add 15-20% of sterile defibrinated horse blood, homogenize and pour into Petri dishes. The medium can be made more selective by aseptically adding 2 vials of Bordetella Supplement (Cat. 6015), previously reconstituted in 5 ml of sterile distilled water.

Instructions for use

For clinical diagnosis, the type of sample is bacteria isolated from any clinical sample.
- Inoculate and incubate the plates at 35±2 ºC for 48-72 hours in a humid environment. Use 2 plates per sample: one with supplement, one without.
- After 48-72 hours, colonies of B. pertussis are small, white, opaque with an unclear edge as the hemolysis zone merges into medium, smooth, slightly elevated, shiny and less than 1 mm in diameter. They are surrounded by hazy zone of hemolysis.
Colonies of B. parapertussis grow faster and at 48 hours are well developed with a similar appearance to B. pertussis, giving a green-black tint to the medium. Colonies of Gram positive cocci are usually opaque and darker.
- After 24-48 hours, colonies of B. bronchiseptica , grow similar to B. pertussis colonies but they are larger with a rough, pitted surface.
- All suspect colonies should be identified by serological methods.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
May present a slight precipitate in solution	Fine powder	Beige	Opalescent amber, opaque cherry red with blood	6,7±0,2

Microbiological test

Incubation conditions: (35±2 °C / 48-72 h).

Microrganisms	Specification	Characteristic reaction
Bordetella parapertussis ATCC 15311	Good growth	Gamma hemolysis
Bordetella bronchiseptica ATCC 4617	Good growth	Gamma hemolysis
Bordetella pertussis ATCC 8467	Good growth	Beta hemolysis

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Bordet, J. y Gengou, O. Ann.Inst. Pasteur 20. 731-741 American Public Health Association (1963) "Diagnostic Procedures and Reagents" 4th Ed. APHA Inc., New York p. 150. 294-5.