

Bordet Gengou agar

Bordet Gengou Agar Base is recommended for the detection and isolation of *Bordetella pertussis* and *Bordetella parapertussis*. Also used for the "cough plate" method in case of whooping cough.

REF: Bs.1/BG01.100.0100	100 Gram	REF: BS.1/BG01.250.01250	250 Gram
REF: BS.1/BG01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Bordet Gengou Agar Media were originally formulated by Bordet and Gengou for cultivation of *Bordetella* species. *Bordetella pertussis* is the causative agent of whooping cough and with the help of cough-plate technique, *B. pertussis* can be isolated from pharyngeal extracts, nasopharyngeal secretions and pre-nasal swabs. Kendrick and Eldering modified the original media by replacing 50% human or rabbit blood with 15% sheep blood to make the medium more enriched for detection of *B. pertussis* by the virtue of its hemolytic reaction. Enrichment of the basal media with 25% human blood aids in the detection of *Mycobacterium* species from small sputum inocula and in Streptomycin sensitivity testing.

METHOD PRINCIPLE

Potato infusion and peptic digest of animal tissue serve as carbon and nitrogen source while glycerol and blood enrichment provides additional nutrients. Sodium chloride maintains osmotic equilibrium. Incubation should be carried out in a moist chamber (60% humidity) at 37°C for up to 7 days. Medium should not be over dried before use. After 40 hours *B. pertussis* colonies appear smooth, raised, glistening with a zone of hemolysis. Some strains of *Bordetella* are not hemolytic. For confirmation, serodiagnosis and biochemical test should be performed. This medium can be made more selective for *Bordetella*. by using antibiotics like penicillin, methicillin, cephalixin of which, cephalixin was found to be superior. Cephalixin suppresses unwanted nasopharyngeal growth and significantly increases the isolation rate of *Bordetella* species. Cephalixin is used at a concentration of 40 mg/liter. Amphotericin B (10 µg/ml) can be added as an antifungal agent to the medium. For isolation of *B. pertussis* from specimens, use standard procedures. Incubate the plates in a moist chamber at 35-37°C for 7 days and examine daily with or without dissecting microscope (oblique illumination) to detect the presence of *B. pertussis*. Sometimes the accompanying mold colonies can mask the *B. pertussis* colonies. Use sterile scalpel or needle to remove the portion of the agar that contains spreading colonies of molds. *B. pertussis* colonies may not be visible without the aid of a microscope for 2-4 days. After 7 days of incubation plates may be discarded as negative. Some *Haemophilus* species will grow on Bordetella isolation media and cross-react with *B. pertussis* antisera. It may be prudent to rule out X and V factor dependence.

MEDIA COMPOSITION

Item	Formula per liter of medium
Potatoes infusion	5.000 gm.
Peptic digest of animal tissue	10.00 gm.
Sodium chloride	5.000 gm.
Agar	15.00 gm.
Final pH (at 25°C)	6.7 ± 0.2

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 Bordet Gengou agar material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

BioScien Bordet Gengou agar media are stable until expiration date stated on label when properly stored at 10-30°C. Bordet Gengou agar media is Suspend 40.00 grams in 1000 ml distilled water containing 10 ml glycerol. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs. pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add 15 - 20% sterile, fresh defibrinated blood (sheep, rabbit, human or horse). For selectivity aseptically add rehydrated contents of 2 vials of Bordetella Selective supplement (FD004). Mix thoroughly, taking care to avoid incorporation of air bubbles and pour into sterile Petri plates.

Deterioration

BioScien Bordet Gengou is Cream to yellow to coloured homogeneous free flowing powder. If there are any physical changes, discard the medium. Prepared medium appearance:

- Basal Medium: Light yellow colored clear to slightly opalescent gel.
 - After addition of glycerol and 15% v/v sterile defibrinated blood: Cherry red coloured opaque gel forms in Petri plates.
- Media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION

Clinical samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes or flasks as desired
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed with added Glycerol and 15% v/v sterile defibrinated blood and Bordetella Selective Supplement (FD004), after an incubation at 35-37°C for 3-4 days.











Organism	Growth	hemolysis
<i>Bordetella bronchiseptica</i> ATCC 4617	Luxuriant	gamma
<i>Bordetella parapertussis</i> ATCC 15311	Luxuriant	gamma
<i>Bordetella pertussis</i> ATCC 8467	Luxuriant	Beta
<i>Staphylococcus aureus</i> ATCC 25923	Inhibited	-

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact **BioScien** technical support.

REFERENCES

1. Bordet and Gengou, 1906, Ann. Inst. Pasteur, 20:731.
2. Kendrick and Eldering, 1934, Am. J. Public Health, 24:309
3. Tarshis M. S. and Frisch A. W., 1951, Am. J. Clin. Pathol., 21:101.
4. Flemming A., 1932, J. Path. Bacteriol., 35:831.
5. Broome C. V., Fraser D. W. and English J. W., 1979, Internat. Symp. on Pertussis, DHEW, Washington, D.C., 19.
6. Suitcliffe E. M. and Abbott J. D., 1972, B. M. J., iii:732.

SYMBOLS IN PRODUCT LABELLING	
 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	

