ARENA BioScien

Block 5, Street 9 inside The Ismailia free zone. Ismailia- Egypt
Post Code-41511
Tel.-Fax: +202 21813500/ +202 21813600
Mob.: +2 01211550941/ +2 01119225860
E-mail: sales@arenabioscientific.com
Website: www.arenabioscien.com

Bordet Gengou agar base

Is used for the detection and isolation of *Bordetella pertussis* and *Bordetella parapertussis*.

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 Bordet Gengou Agar was originally formulated by Bordet and Gengou (1) for the cultivation of Bordetella species. Bordetella pertussis is the causative agent of whooping cough and, with the aid of the cough-plate technique, can be isolated from pharyngeal exudates, nasopharyngeal secretions, and pernasal swabs. Kendrick and Eldering (2) modified the original medium by replacing 50% human or rabbit blood with 15% sheep blood, thereby enhancing the detection of B. pertussis through its haemolytic activity. Enrichment of the basal medium with 25% human blood facilitates the recovery of Mycobacterium species from specimens containing low numbers of organisms and is also useful for streptomycin susceptibility testing (3).The medium is highly nutritious and supports luxuriant growth of Bordetella species. Consequently, it can be employed for the mass cultivation of B. pertussis in vaccine production (4) as well as for the maintenance of stock cultures (1).

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, cephalexin of which, cephalexin was found to be superior. Cephalexin suppresses unwanted nasopharyngeal growth and significantly increases the isolation rate of *Bordetella* species. Cephalexin 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 from 125 g	4.5 gm.
Peptone	10.00 gm.
Sodium chloride	5.5 gm.
Agar	20.0 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 Bordet Gengou Agar material safety data sheet.

STORAGE AND STABILITY

BioScien Bordet Gengou agar media are stable until expiration date stated on label when properly stored at 10-30°C.

MEDIA PREPARATION,

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
Bordetella bronchiseptica ATCC 4617	Luxuriant	gamma
Bordetella parapertussis ATCC 15311	Luxuriant	gamma
Bordetella pertussis ATCC 8467	Luxuriant	Beta
Staphylococcus aureus 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.Broome C. V., Fraser D. W. and English J. W., 1979, Internat. Symp. on Pertussis, DHEW, Washington, D.C., 19.

5.Flemming A., 1932, J. Path. Bacteriol., 35:831.

6.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

7.Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W.(2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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