# Technical Information

## Bordet Gengou MiVeg Agar Base

## Product Code : VM1175

**Application:-** Bordet Gengou MiVeg Agar Media is used for the detection and isolation of *Bordetella pertussis* and *Bordetella parapertussis*. Also used for the "cough plate" method in case of whooping cough.

## Composition**

| Ingredients | Gms / Litre |
|---|---|
| Potatoes infusion from | 125.0 |
| MiVeg peptone | 10.00 |
| Sodium chloride | 5.50 |
| Agar | 20.00 |
| Final pH ( at 25°C) | 6.7±0.2 |

** Formula adjusted, standardized to suit performance parameters.

## Principle & Interpretation

Bordet Gengou MiVeg Agar Base is prepared by using MiVeg peptones instead of peptic digest of animal tissue thus the media becomes BSE/TSE risk free. This medium is the modification of originally formulated media for cultivation of *Bordetella* species, by Bordet and Gengou (1). This media is used for diagnosing whooping cough from pharyngeal exudates, nasopharyngeal swabs. Cough plate technique are used for isolation of *Bordetella pertussis* - a causative agent of whooping cough. The medium contains Potato infusion and MiVeg peptone which serve as carbon and nitrogen source while glycerol and blood enrichment supplies additional nutrients required for the growth of organism. Being highly nutritious, these media support luxuriant growth of *Bordetella* and can be used for mass cultivation of *Bordetella pertussis* for vaccine production (2) and for maintaining stock cultures (1). Enrichment of the basal medium with 15% sheep blood aids in the detection of *Bordetella pertussis* by the virtue of its haemolytic reaction and with 25% human blood aids in the detection of *Mycobacterium* species from small sputum inocula and in Streptomycin sensitivity testing (3). Incubation should be carried out in a moist chamber (60% humidity) at 37°C for upto 7 days. Medium should not be overdried before use. After incubation *Bordetella pertussis* colonies appear smooth, raised, glistening with a zone of haemolysis. This media can be selective for *Bordetella*, by using antibiotics like Penicillin (4), Methicillin (5), Cephalexin (6) amongst which Cephalexin was found to be superior. Cephalexin is used at a concentration of 40 mg/litre. Amphotericin B (10 µg/ml) can be added as an antifungal agent to the medium.

## Methodology

Suspend 40.0 grams of powder media in 1000 ml distilled water containing 10 ml Gycerol. Mix thoroughly. 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). Mix gently, taking care to avoid incorporation of air bubbles and pour into sterile petri plates.

## Quality Control

**Physical Appearance**

Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

**Gelling**

Firm, comparable with 2.0% Agar gel.

**Colour and Clarity of prepared medium**

Basal medium yields, light yellow coloured clear to slightly opalescent gel, with addition of 15% v/v sterile defibrinated blood, cherry red coloured, opaque gel forms in petri plates.

**Reaction**

Reaction of 4.0 % w/v aqueous solution pH: 6.7±0.2 at 25°C

**pH range**

6.5-6.9

**Cultural Response/Characteristics**

Cultural characteristics observed after an incubation at 35 - 37°C for 3-4 days with added glycerol and 15% v/v sterile defibrinated blood.

| Organisms (ATCC) | Growth | Haemolysis |
|---|---|---|
| *Bordetella bronchiseptica* (4617) | good - luxuriant | gamma |
| *Bordetella pertussis* (8467) | good - luxuriant | beta |
| *Bordetella parapertussis* (10521) | good - luxuriant | gamma |

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
**Prepared Media:** 2-8$^0$ in sealable plastic bags for 2-5 days.

## Further Reading

1. Bordet J. and Gengou O., 1906, Ann. Inst. Pasteur, 20:731.
2. Kendrick P.L. and Eldering G., 1936, Am. J. Pub. Health, 26:506.
3. Tarshis M.S. and Frisch A.W., 1951, Am. J. Clin. Path., 21:101.
4. Flemming A., 1932, J. Path. Bact., 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.

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