

Clostridium HiVeg™ Broth Base**MV1315**

Clostridium HiVeg Broth Base is recommended for identification of spores of *Clostridium tyrobutyricum* which is usually responsible for "late blowing" in cheese.

Composition ** :

Ingredients	Grams/Litre
HiVeg hydrolysate	15.0
HiVeg extract No. 1	10.0
Yeast extract	5.0
Sodium acetate	5.0
L-Cysteine	0.5

Final pH (at 25°C) 6.0 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 35.5 grams in 1000 ml distilled water. Add 10 ml of 50% sodium lactate. Heat if necessary to dissolve the medium completely. Mix well and dispense into tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle and Interpretation :

Clostridium HiVeg Broth Base is prepared by completely replacing animal based peptones with vegetable peptones. Clostridial HiVeg Broth Base is the modification of Clostridial Broth Base recommended for identification of spores of *Clostridium tyrobutyricum* which is usually responsible for "late blowing" of hard cheese.

Clostridium tyrobutyricum ferments lactate and acetate to butyrate, carbon dioxide (CO₂) and water (H₂O) (1,2). They are frequently found as dominating anaerobic spore formers in spoiled cheese, milk products etc. As against *Clostridium butyricum*, *Clostridium tyrobutyricum* grows in media with lower (acidic) pH (3,4). Low pH value of the media helps in inhibiting other microbial flora thereby favoring growth of *Clostridium tyrobutyricum*. HiVeg hydrolysate, HiVeg extract No.1 and yeast extract provide the essential nutrients mainly the nitrogen compounds whereas L-Cysteine promotes the growth of *Clostridial* species.

The *Clostridium tyrobutyricum* count is best determined by MPN method. Incubate the tubes with the milk to be tested or dilutions thereof. Then overlay the culture medium with a 2 cm layer of melted paraffin and pasteurize for about 10 minutes at -15°C. Incubate for approximately 7 days at 35-37°C.

Product Profile :

Vegetable based (Code MV)©	Animal based (Code M)
MV1315 HiVeg hydrolysate HiVeg extract No. 1	M1315 Casein enzymic hydrolysate Meat extract

Recommended for : Identification of spores of *Clostridium tyrobutyricum*.

Reconstitution : 35.5 g/l

Quantity on preparation (500g) : 14.08 L

pH (25°C) : 6.0 ± 0.2

Supplement : 50% Sodium lactate

Sterilization : 121°C / 15 minutes.

Storage : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

Tubes in which the paraffin plugs are pushed up as a result of gas formation can be considered as positive indicating that it is due to presence of *Clostridium tyrobutyricum*.

Quality Control :**Appearance of powder**

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

Colour and Clarity

Yellow coloured clear solution without any precipitate.

Reaction

Reaction of 3.55% w/v aqueous solution is pH 6.0 ± 0.2 at 25°C.

Cultural Response

Cultural characteristics observed after an incubation at 35 - 37°C for 7 days.

Organisms (ATCC)	Growth	Gas
<i>Clostridium perfringens</i> (12924)	luxuriant	-
<i>Clostridium tyrobutyricum</i>	luxuriant	+
<i>Escherichia coli</i> (25922)	good	-
<i>Pseudomonas aeruginosa</i> (27853)	inhibited	-
<i>Staphylococcus aureus</i> (25923)	good	-

References :

1. Brandl E. and Sobek - Skal E., 1963, Milchwiss. Ber., 13:1.