

## Lee's HiVeg™ Agar

MV602

Lee's HiVeg Agar is used for differential enumerations of yoghurt starter bacteria (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*).

**Composition \*\* :**

Ingredients	Grams/Litre
HiVeg hydrolysate	10.0
Yeast extract	10.0
Lactose	5.0
Sucrose	5.0
Calcium carbonate	3.0
Dipotassium phosphate	0.5
Bromo cresol purple	0.02
Agar	18.0

Final pH (at 25°C) 7.0 ± 0.2

\*\* Formula adjusted, standardized to suit performance parameters.

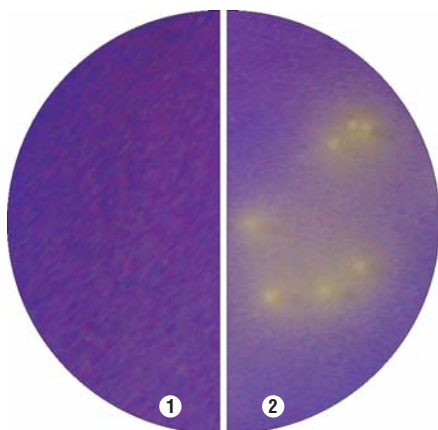
**Directions :**

Suspend 51.52 grams in 1000 ml distilled water. Heat just to boiling. Dispense and sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. While dispensing, mix carefully to suspend calcium carbonate evenly. Pour into sterile petri plates to obtain 4-5 mm thick gel.

**NOTE :** Due to the presence of calcium carbonate the prepared medium forms opalescent solution with white precipitate.

**Principle and Interpretation :**

Lee's HiVeg Agar is prepared by using HiVeg hydrolysate which is a vegetable peptone instead of Casein enzymic hydrolysate and hence the medium is free from BSE/TSE risks. Lee's HiVeg Agar is the modification of Lee's Agar which is formulated as per APHA (1) for differential enumeration of yoghurt starter bacteria, homofermentative *Lactobacillus bulgaricus* and heterofermentative *Streptococcus thermophilus*. Yoghurt is made by the controlled fermentation of milk held at 43°C using a starter culture of *Streptococcus thermophilus* and *Lactobacillus*



**MV602 Lee's HiVeg Agar**

1. Control
2. *Streptococcus thermophilus*

**Product Profile :**

Vegetable based (Code MV)Ⓞ	Animal based (Code M)
<b>MV602</b> HiVeg hydrolysate	<b>M602</b> Casein enzymic hydrolysate

**Recommended for** : Differential enumerations of yoghurt starter bacteria.

**Reconstitution** : 51.52 g/l

**Quantity on preparation (500g)** : 9.70 L

**pH (25°C)** : 7.0 ± 0.2

**Supplement** : None

**Sterilization** : 121°C / 20 minutes.

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

*bulgaricus*. *Streptococci* grow first and produce a creamy, buttery aroma from diacetyl and similar metabolites. Redox potential is also lowered by *Streptococci* which enables *Lactobacilli* to grow thereby growth stimulatory products for *Streptococci* are synthesized by *Lactobacilli*. Hence the typical sharp acetaldehyde flavour of mature yoghurt is formed (2). HiVeg hydrolysate and yeast extract provide the essential nitrogenous nutrients to the yoghurt (lactic) starter bacteria. Lactose and sucrose are the fermentable carbohydrates. Calcium carbonate is added to medium along with the dipotassium phosphate to buffer the medium and avoid the drastic drop in pH due to lactic acid formation. Bromo cresol purple is the pH indicator which turns yellow in acidic condition and imparts yellow colour to the colony. It is recommended to dry the media plates for 18-24 hours prior to use.

**Quality Control :****Appearance of powder**

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

**Gelling**

Firm, comparable with 1.8% Agar gel.

**Colour and Clarity**

Purple coloured, opaque gel forms in petri plates.

**Reaction**

Reaction of 5.15% w/v aqueous solution is pH 7.0 ± 0.2 at 25°C.

**Cultural Response**

Cultural characteristics observed after an incubation at 35-37°C for 48 hours in presence of Carbon dioxide (CO<sub>2</sub>).

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Lactobacillus bulgaricus</i> (11842)	10 <sup>2</sup> -10 <sup>3</sup>	luxuriant	>70%	white
<i>Streptococcus thermophilus</i> (14486)	10 <sup>2</sup> -10 <sup>3</sup>	luxuriant	>70%	yellow

**References :**

1. Downes FP, Ito K (Eds.), 2001, Compendium of Methods For the Microbiological Examination of Foods, 4<sup>th</sup> ed., APHA, Washington, D.C.
2. Davis J.G., Ashton T.F. and MaCaskill M., 1971, Dairy Ind., 36:569.