

Columbia C.N.A. HiVeg™ Agar Base / w/ 1% Agar MV560 / MV560A

Columbia C.N.A. HiVeg Agar Base/w/1% Agar is used for selective isolation of pathogenic gram-positive cocci from clinical and nonclinical specimens.

Composition :**

| Ingredients | MV560 | MV560A |
|---------------------|-------------|-------------|
| | Grams/Litre | Grams/Litre |
| HiVeg peptone No. 5 | 20.00 | 20.00 |
| HiVeg infusion | 3.00 | 3.00 |
| Corn starch | 1.00 | 1.00 |
| Sodium chloride | 5.00 | 5.00 |
| Colistin sulphate | 0.01 | 0.01 |
| Nalidixic acid | 0.015 | 0.015 |
| Agar | 15.00 | 10.00 |

Final pH (at 25°C) 7.3 ± 0.2

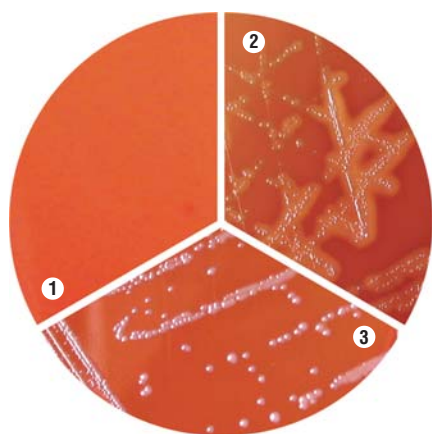
** Formula adjusted, standardized to suit performance parameters

Directions :

Suspend 44.0 grams of MV560 or 39.0 grams of MV560A in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add 5% v/v sterile, defibrinated blood. Mix well and pour into sterile petri plates.

Principle and Interpretation :

This medium is prepared by completely replacing animal based peptones with vegetable peptones. Columbia C.N.A. HiVeg Agar Base is prepared as per the modified formula of Ellner et al (1) which was originally designed as Columbia Blood Agar Base. Combination of HiVeg peptones and HiVeg infusion support the rapid and luxuriant growth and sharply defined haemolytic reactions, typical colonial morphology and improved pigment production. Subsequently, Ellner et al found that a medium consisting of 5% sheep blood and 10 µg Colistin and 15 µg Nalidixic acid per ml of medium, suppressed growth of *Proteus*, *Klebsiella* and *Pseudomonas* species while permitted unrestricted growth of *Staphylococci*, haemolytic *Streptococci* and *Enterococci*. Colistin and Nalidixic acid inhibit gram-negative bacteria by disrupting the cell membrane and blocking DNA replication respectively (2).



MV560 Columbia C. N. A. HiVeg Agar Base

1. Control
2. *Streptococcus pyogenes*
3. *Staphylococcus aureus*

Product Profile :

| Vegetable based (Code MV)Ⓞ | Animal based (Code M) |
|--|--|
| MV560/MV560A HiVeg peptone No.5 HiVeg infusion | M560/M560A Biopeptone Tryptic digest of heart muscle |

| | | |
|--|---|--|
| Recommended for | : | Selective isolation of pathogenic gram positive cocci from clinical and nonclinical specimens. |
| Reconstitution | : | (MV560) : 44.0 g/l (MV560A) : 39.0 g/l |
| Quantity on preparation (500g): | : | (MV560) : 11.36 L (MV560A) : 12.82 L |
| pH (25°C) | : | 7.3 ± 0.2 |
| Supplement | : | 5% v/v sterile defibrinated blood |
| Sterilization | : | 121°C / 15 minutes. |
| Storage | : | Dry Medium and Prepared Medium 2 - 8°C. |

Quality Control:

Appearance of Powder

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

Gelling

Firm, comparable with 1.5% Agar gel of MV560 or 1.0% Agar gel of MV560A.

Colour and Clarity

Basal media yields yellow coloured, slightly opalescent gel; with addition of 5% v/v sterile, defibrinated blood cherry red coloured, opaque gel forms in petri plates.

Reaction

Reaction of 4.4% w/v of MV560 or 3.9% w/v of MV560A aqueous solution is pH 7.3 ± 0.2 at 25°C.

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 40-48 hours.

| Organisms (ATCC) | Inoculum (CFU) | Growth | Recovery | Haemolysis |
|---|----------------------------------|-----------|----------|------------|
| <i>Staphylococcus aureus</i> (25923) | 10 ² -10 ³ | luxuriant | > 50% | beta/gamma |
| <i>Staphylococcus epidermidis</i> (12228) | 10 ² -10 ³ | luxuriant | > 50% | gamma |
| <i>Streptococcus pneumoniae</i> (6303) | 10 ² -10 ³ | luxuriant | > 50% | alpha |
| <i>Streptococcus pyogenes</i> (19615) | 10 ² -10 ³ | luxuriant | > 50% | beta |
| <i>Escherichia coli</i> (25922) | 10 ² -10 ³ | inhibited | 0% | — |
| <i>Neisseria meningitidis</i> (13090) | 10 ² -10 ³ | good | 30% | — |

References :

1. Ellner et al, 1966, Am. J. Clin. Path., 45:502.
2. Estevez, 1984, Lab. Med., 15:258.