

**Columbia Agar Base**

Solid medium recommended for the cultivation of fastidious and non-fastidious microorganisms from clinical samples. It is also used as a base for the preparation of a variety of special media.

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| REF: V.1/CO01.100 100 Gram REF: V.1/CO01.500 500 Gram  | REF: V.1/CO01.250 250 Gram   |

**CLINICAL SIGNIFICANCE**

Columbia Agar Base is a recommended isolation medium for isolation of non-fastidious and fastidious microorganisms from clinical specimens. It is a primary isolation medium on which most microorganisms, such as Enterobacteriaceae, Pseudomonas, and other non-fermenting Gram-negative rods, streptococci, enterococci, staphylococci, coryneforms, Candida species, and many others will grow. The medium is suitable for supporting the growth and determining hemolytic reactions of a variety of microorganisms

**METHOD PRINCIPLE**

Columbia Agar base contains special peptones which supply nitrogen, carbon, vitamins, and trace elements necessary for the growth of microorganisms. Corn starch serves as the energy source for microorganisms and neutralizes toxic metabolites by absorbing toxic by-products contained in the specimen. Sodium chloride maintains osmotic equilibrium.

The Columbia Agar can also be used as a base medium to prepare a wide range of other media by adding special supplements for selective cultivation and isolatiom. Chocolate agar supplemented with 10% heated blood is suited for isolating Haemophilus and Neisseria species. Gentamicin Blood Agar is used for the selective cultivation of Streptococcus pneumoniae and other Streptococci as weIl as bacterioides, Clostridium and yeasts. The Colombia CNA Agar suppresses the growth of Proteus, Klebsiella and Pseudomonas species while Staphylococci, haemolytic Strepptococci and Enterococci still grow. Lactose Milk Egg-Yolk Agar is recommended for the isolation of fastidious Clostridia. The addition of blood, cycloserine and cefoxitin to Columbia Agar Base is recommended for the isolation of Clostridium difficile. It can also be employed in the so-called Corynebacterium diphtheriae toxicity (virulence) test when using the agar plate diffusion method. It is used to prepare Vaginalis agar for the cultivation of Gardnerella vaginalis. Also possible is to make AcriflavinCeftacidim Agar (AC Agar) for the selective cultivation of Listeria from foodstuffs.

**MEDIA COMPOSITION**

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| Item  | Formula per liter of medium  |
|  Special peptone | 23gm |
| Starch  | 1 gm |
| Sodium chloride  | 5 gm |
| Agar  | 10 gm |

**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 Columbia Agar Base material safety

data sheet.

**STORAGE AND STABILITY**

**Lab.Vie**. Columbia Agar Base should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

***Final pH 7.3 ± 0.2 at 25°C***

**PREPARATION**

Dissolve 39 grams in 1 liter of distilled water. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and add heat sensitive components. Incubate at 35°C under anaerobic conditions.

To prepare Blood agar: Add 5% blood to Columbia Agar after cooling, mix well and pour into sterile petri dishes. To prepare Chocolate agar: Add 10% sterile defibrinated blood to Columbia Agar and heat for 10 minutes at 80oC or until the medium turns chocolate brown then pour into sterile petri dishes.

**Deterioration**

The color of **Lab.Vie**. Columbia Agar Base is cream to yellow homogeneous free flowing powder. Prepared basal media is light amber in color. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

**SPECIMEN**

Pharmaceutical samples

**EQUIPMENT REQUIRED NOT PROVIDED**

* Sterile petri dishes
* Incubator
* Autoclave

**PERFORMANCE CHARACTERISTICS**

Cultural characteristics observed after incubation at 35-37°C for 18-24H, then sub-cultured on MacConkey Agar, incubated and examined after 18-24 hours.

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| **SYMBOLS IN PRODUCT LABELLING**  |
|  **IVD For in-vitro diagnostic use**  | **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**   **Expiration Date**  **Manufactured by**  |  **Consult Instruction for use**  |

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| Microorganism  | Result  |
| Neisseria meningitidis ATCC 13090  | Luxuriant growth with no haemolysis  |
| Staphylococcus aureus ATCC 25923  | Luxuriant growth with beta-gamma haemolysis  |
| Streptococcus pneumoniae ATCC 6303  | Luxuriant growth with alpha haemolysis  |
| Streptococcus pyogenes ATCC 19615  | Luxuriant growth with beta haemolysis  |
| Clostridium sporogenes ATCC 19404  | Luxuriant growth  |
| Clostridium perfringens ATCC 13124  | Luxuriant growth  |

**QUALITY CONTROL**

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact **Lab.Vie**. technical support.

**REFERENCES**

1. I.J. Al-Jumaili, A.J Bint, Simple method of isolation and presumptive identification of Clostridium difficile, Zbl. Bakt., I. Abt. Orig. A, 250, 152 (1981).
2. P.D. Ellner , C.J. Stoessel, E. Drakeford, F. Vasi, Tech. Bull. Reg. Med. Techn., 36, No. 3 (1966), reprinted in Amer. J. Clin. Path., 45, 502 (1966)
3. . E.S. Bannerman, J. Bille, Base agar in a medium for isolating

Listeria spp. from heavily contaminated material, Appl. Env. Microbiol.

54, 165 (1988)

1. D. Hunter, M. Kearns, Brit. Vet. J., 133, 486 (1977)
2. I.D. Farrel, L. Robinson, J. Appl. Bact., 35, 625 (1972)
3. G.J. Hermann, M.S. Moore, E.J. Parson, A substitute for serum in the diphtheria in vitro toxigenicity test, Amer. J. Clin. Path., 29, 181 (1958) 7. . W.L. Hynes, J.R. Tagg, In a simple plate assay for detection of group A streptococcus proteinase, J. Microbiol. Methods 4, 25 (1985)
4. . W.A. Black, F. van Buskirk, Gentamicin blood agar used as a general-purpose selective medium, Appl. Microbiol., 25, 905 (1973).
5. . D.E. Hunt, J.V. Jones, V.R. Dowell, Selective medium for the isolation of Bacteroides gingivalis, J. Clin. Microbiol., 23, 441 (1986)

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