

## Columbia CNA Agar Base

Catalog : HB0153-3-250

Columbia CNA Agar Base is used for the isolation and differentiation of gram-positive microorganisms.

### Approximate Formula:

| Ingredients             | gm/liter |
|-------------------------|----------|
| Special Peptone         | 23.0     |
| Soluble Starch          | 1.0      |
| Sodium Chloride         | 5.0      |
| Agar                    | 12.0     |
| Nalidixic Acid          | 0.015    |
| Polymyxin E             | 0.01     |
| Final pH7.3±0.2 at 25°C |          |

\*Adjusted and/or supplemented as required to meet performance criteria.

### Directions:

Suspend 41.0g of the medium in 1000mL of deionized or distilled water. Mix well and heat with frequent agitation to completely dissolve the powder. Sterilize in an autoclave at 121°C (15 lbs.) for 15 minutes. Cool to 50°C, aseptically add 5% sterile defibrinated sheep blood. Mix evenly. Pour into petri dishes.

### Principle and Interpretation:

Peptone special provide sources of carbon, nitrogen, vitamins and minerals. Starch serves as an energy source and neutralizes toxic metabolites. Sheep blood permits the detection of hemolysis and provides heme (X factor), which is required for the growth of many bacteria. Sodium chloride maintains osmotic balance in the medium. Agar is the solidifying agent. Colistin (polymyxin E) and Nalidixic acid renders the medium selective for gram positive microorganisms. Colistin (polymyxin E) disrupt the cell membrane of gram-negative organisms, whereas the Nalidixic acid blocks DNA replication in susceptible gram-negative bacteria.

### Appearance:

Dehydrated medium is a free-flowing yellowish powder. The prepared medium is a kind of red gel.

### Precautions:

This medium is for laboratory use only. Dried medium which is caking or color variation cannot be used.

### Storage conditions and Shelf life:

Columbia CNA Agar Base must be stored tightly capped in the original container at 5-30°C. The dehydrated medium has a shelf life of 5 years from date of manufacturing. Prepared medium may be stored, out of direct light at 2-8°C.

### Quality control:

Prepare the culture medium as per label directions. Inoculate and incubate at 36±1°C for 24 hours.

| Microorganism                   | Strains Number | Growth    | Remarks                              |
|---------------------------------|----------------|-----------|--------------------------------------|
| <i>Escherichia coli</i>         | ATCC 25922     | inhibited | /                                    |
| <i>Staphylococcus Aureus</i>    | ATCC 6538      | luxuriant | β-Hemolytic ring around the Colonies |
| <i>Streptococcus pyogenes</i>   | ATCC 19615     | luxuriant | β-Hemolytic ring around the Colonies |
| <i>Streptococcus pneumoniae</i> | ATCC 6305      | luxuriant | α-Hemolytic ring around the Colonies |

### References:

- Ellner, Stoessel, Drakeford and Vasi. 1966. Am. J. Clin. Pathol. 45:502.
- Garrod and O'Grady. 1971. In Antibiotics and chemotherapy, 3rd ed. Williams & Wilkins, Baltimore, Md.
- Murray, Baron, Jorgensen, Landry and Pfaller (ed.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.
- Estevez. 1984. Lab. Med. 15:258.