

Columbia Agar

Catalog : HB0124-14-250

Columbia Agar is highly nutritious, general-purpose medium for the isolation and cultivation of non-fastidious and fastidious microorganisms from a variety of clinical and non-clinical materials; also used as selective media in which various combinations of antimicrobial agents as additives.

Approximate Formula:

Ingredients	gm/liter
Pancreatic Digest of Casein	10.0
Peptic Digest of Animal Tissue	5.0
Beef Heart Infusion Solids	3.0
Yeast Extract	5.0
Corn Starch	1.0
Sodium Chloride	5.0
Agar	15.0
Final pH7.3±0.2 at 25℃	

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

Directions:

Suspend 44.0g of the powder in 1000mL of purified water or distilled water. Mix well and heat with frequent agitation to completely dissolve the powder. Sterilize in an autoclave at 121℃ (15 lbs.) for 15 minutes. When cool to 45℃~50℃ and add heat sensitive components, mix well, and pour into petri dishes.

Principle and Interpretation:

Pancreatic digest of casein, peptic digest of animal tissue provide sources of carbon, nitrogen, vitamins and minerals. Yeast extract being a supplier of the B-complex vitamins. Corn 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. Gentamicin sulfate can inhibit the growth of Enterobacteriaceae and Pseudomonas aeruginosa. Sodium chloride maintains osmotic balance in the medium. Agar is the solidifying agent.

Appearance:

Dehydrated medium is a free-flowing yellowish powder. The prepared medium is a kind of yellowish transparent 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 Agar must be stored tightly capped in the original container at 5-30℃. 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℃.

Quality control:

Prepare the culture medium as per label directions (with 5%-10% sheep blood). Inoculate and incubate at 36±1℃ for 24-48h.

Microorganism	Strains Number	Inoculum (CFU)	Growth	Remarks
<i>Bacillus cereus</i>	ATCC 11778	10-100	luxuriant	β-Hemolytic ring around the Colonies
<i>Staphylococcus Aureus</i>	ATCC 6538	10-100	luxuriant	β-Hemolytic ring around the Colonies
<i>Beta-hemolytic Streptococcus</i>	CMCC 32210	10-100	luxuriant	β-Hemolytic ring around the Colonies
<i>Streptococcus pneumoniae</i>	ATCC 6305	10-100	luxuriant	α-Hemolytic ring around the Colonies

Prepare the culture medium as per label directions (without sheep blood). Inoculate and incubate at 30-35℃ for 24-48h in an anaerobic atmosphere.

Microorganism	Strains Number	Inoculum (CFU)	Growth	Remarks
<i>Clostridium sporogenes</i>	ATCC 19404	10-100	luxuriant	Colorless-yellowish colonies
<i>Clostridium perfringens</i>	ATCC 13124	10-100	luxuriant	Colorless-yellowish colonies

References:

- United States Pharmacopeial Convention, Inc. 2008. The United States pharmacopeia 31/The national formulary 26, Supp. 1, 8-1-08, online. United States Pharmacopeial Convention, Inc., Rockville, Md.
- European Directorate for the Quality of Medicines and Healthcare. 2008. The European pharmacopoeia, 6th ed., Supp. 1, 4-1-2008, online. European Directorate for the Quality of Medicines and Healthcare, Council of Europe, 226 Avenue de Colmar BP907, F-67029 Strasbourg Cedex 1, France.