EP
USP
ISO

Columbia Agar (Base)

This superior, complete medium proposed by ELLNER et al. (1966) can be used for the cultivation of even fastidious microorganisms and also as a base for the preparation of various special culture media.

IVD *in vitro diagnosticum –*
For professional use only

CE

See also General Instruction of Use
Warnings and precautions see ChemDAT® (www.chemdat.info)

Principle

Microbiological method

General Information

This medium complies with the recommendations of the harmonised method in the European Pharmacopeia 5.6 and the United States Pharmacopeia 29 (2006).

This culture medium can be utililzed to prepare blood or boiled blood agar ("chocolate agar"), special inhibitors must be added for selective cultivation. Columbia agar base can be used to prepare lactose milk egg-yolk agar for the isolation of fastidious clostridia (ELLNER et al. 1966). AL-JUMAILI and BINT (1981) recommended the addition of blood, cycloserine and cefoxitin to Columbia agar (base) for the isolation of Clostridium difficile. It can also be employed in the so-called Corynebacterium diphtheriae toxicity (virulence) test according to HERMANN et al. (1958) when using the agar plate diffusion method described by ELEK (1949). GREENWOOD et al. (1977) used it to prepare Vaginalis agar for the cultivation of Gardnerella vaginalis. BANNERMANN and BILLE used it to make Acriflavin-Ceftacidim Agar (AC Agar) for the selective cultivation of Listeria from foodstuffs.

Typical Composition (g/litre)

Peptrone from casein 10.0; peptone from meat 5.0; heart extract 3.0; extract from yeast 5.0; starch 1.0; sodium chloride 5.0; agar-agar 13.0.

Preparation

Suspend 42 g/litre, autoclave (15 min at 121 °C).

Cool to 45-50 °C before mixing in heat-sensitive additives.

pH: 7.3 ± 0.2 at 25 °C.

The plates are clear and yellowish-brown. After blood is added, they are bright red and non-hemolytic

Preparation of blood agar: Mix 5 ml blood homogeneously with 95 ml sterile culture medium base. Pour plates.

Preparation of gentamicin blood agar: Mix 100 ml defibrinated sheep blood and 0.11 ml gentamicin solution homogeneously with 900 ml sterile culture medium base. Pour plates.

Preparation of boiled agar: Add 10 ml blood to 90 ml sterile culture medium base. Heat the mixture in a water bath for about 10 minutes to 80 °C swirling all the time until the medium becomes chocolate brown in colour, pour plates.

Preparation of lactose milk egg-yolk agar: Dissolve 42 g dehydrated culture medium, 12 g lactose, 1 g agar-agar in 1 litre demineralized water. Mix in 33 ml/litre of a 0.1 % aqueous solution of neutral red, adjust the pH to 7.0 and autoclave (15 min at 121 °C). Cool to 45-50 °C, add approximately 35 ml egg-yolk emulsion/litre and 10 g dried milk/litre and mix homogeneously. Pour plates.

Storage

Usable up to the expiry date when stored dry and tightly closed at +15 to +25° C. Protect from light.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 to +25 °C.

Specimen

e.g. Blood.

Clinical specimen collection, handling and processing, see general instructions of use.

Experimental Procedure

Depend on the purpose for which the medium is used.

Literature

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Ordering Information

Product	Ordering No.	Pack size
Columbia Agar (Base)	1.10455.0500	500 g
Columbia Agar (Base)	1.10455.5000	5 kg
Agar-agar purified	1.01614.1000	1 kg
Egg-yolk emulsion sterile	1.03784.0001	10 x 100 ml
Gentamicin solution	1.11977.0001	10 ml
Lactose monohydrate	1.07657.1000	1 kg
Neutralred indicator	1.01369.0025	25 g
Skim milk powder	1.15363.0500	500 g
Defibrinated blood		

Quality control (spiral plating method)

Test strains	Inoculum (CFU)	Growth		Hemolysis	Bacitrain test
		without blood	with blood		
Escherichia coli ATCC 8739	10 - 100	≥ 70	≥ 70		
Staphylococcus aureus ATCC 6538	10 - 100	≥ 70	≥ 70	β	-
Streptococcus pyogenes ATCC 12344	10 - 100	≥ 70	≥ 70	β	+
Streptococcus pyogenes ATCC 21059	10 - 100	≥ 70	≥ 70	β	+
Streptococcus pneumoniae ATCC 6301	10 - 100	≥ 70	≥ 70	α	-
Enterococcus faecalis ATCC 19433	10 - 100	≥ 70	≥ 70	-	-
Bacillus cereus ATCC 11778	10 - 100	≥ 70	≥ 70	β	
Clostridium sporogenes ATCC 11437	10 - 100	≥ 70	≥ 70		
Clostridium sporogenes ATCC 19404	10 - 100	≥ 70	≥ 70		