Northeast Laboratory Services

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TECHNICAL PRODUCT INFORMATION

Catalog No: P1250 Columbia CNA Agar w/Sheep Blood

INTENDED USE:
Columbia CNA Agar w/Sheep Blood is recommended for use as a base for blood agar for the selective isolation of Gram positive microorganisms from clinical and non-clinical samples.

HISTORY/SUMMARY:
Ellner et al. of Columbia University[1] described a variation of Columbia Blood Agar base for selecting gram positive organisms. Columbia CNA, a formulation variation, is recommended for use with defibrinated sheep to provide flourishing growth with clearly defined hemolytic reactions. The addition of 10 mg Colistin and 15 mg Nalidixic Acid per mL of media, suppressed the growth of Proteus, Klebsiella and Pseudomonas species while allowing unrestricted growth of staphylococci, hemolytic streptococci and enterococci[2]. The sheep blood provides the ability to differentiate hemolytic reactions.

PRINCIPLES:
Peptones provide growth supporting properties; yeast extract and cornstarch provide energy sources, the yeast extract supplies B-complex vitamins. Sheep blood supports growth of fastidious organisms and exhibits detection of hemolytic reactions. Due to the high carbohydrate content of this media, beta hemolytic streptococci may display a greenish hemolytic reaction, which could be mistaken for an alpha hemolysis.
The addition of Colistin and Nalidixic Acid inhibits growth of gram negative organisms.

FORMULA:

Component (per liter of purified water)	Amount
Casein/ Meat Peptone	10.0 g
Casein/ Yeast Peptone	10.0 g
Heart Peptone	3.0 g
Sodium Chloride	5.0 g
Corn Starch	1.0 g
Colistin	10.0 mg
Nalidixic Acid	15.0 mg
Agar	15.0 g
Defibrinated Sheep Blood	50.0 mL

Final pH: 7.3 ± 0.2 @ 25°C

PRECAUTIONS:
Since living organisms used with this material can be infectious to the user, proper handling and disposal methods should be established by the laboratory director. This product is for In Vitro Diagnostic Use.

STORAGE:
This media should be stored at 2-8°C. Adequate storage prolongs the life and quality of the product, use prior to expiration date.

SPECIMEN COLLECTION:
The method of specimen collection and its subsequent handling will vary with the site of infection, suspected etiology and the requirements of the physician. It is therefore recommended that the method of specimen collection be selected by and performed under the supervision of a suitably trained professional.

PROCEDURE:
Before inoculation is performed, the culture medium should be brought to room temperature. Generally accepted microbiological procedures should be used for the inoculation of conditions and duration of incubation.

PERFORMANCE CHARACTERISTICS:

Organisms	Results
Streptococcus pyogenes	Heavy growth; beta hemolysis; grey colonies
Streptococcus pneumoniae	Heavy growth; alpha hemolysis
Listeria monocytogenes	Heavy growth; beta hemolysis; colorless to blue gray colonies
Staphylococcus aureus	Heavy growth; beta hemolysis; medium cream-yellow colonies
Micrococci species	Large white to gray or yellow to orange with or without hemolysis
Candida species	Small white colonies
Escherichia coli & gram negative bacteria	Inhibited to trace growth

QUALITY CONTROL:

ATCC#	**Organism**	
ATCC# 6305	*Streptococcus pneumoniae*	Good growth, alpha hemolysis @ 30-35°C in CO_2
ATCC# 19615	*Streptococcus pyogenes*	Good growth, beta hemolysis @ 30-35°C in CO_2
ATCC# 25923	*Staphylococcus aureus*	Good growth, beta hemolysis @ 30-35°C in CO_2
ATCC# 12453	*Proteus mirabilis*	Partial to complete inhibition @ 30-35°C in CO_2

It is recommended that the laboratory confirm the performance characteristics of this media. Careful selection of test organisms must be made so maximum information on product suitability is obtained.

REFERENCES:
1) American Journal of Clinical Pathology, 45:502, 1966
2) Difco & BBL Manual, 2003, pages156-157