thermoscientific

Product Specification Sheet

Columbia CNA Aesculin Selective Agar / MacConkey Agar No. 3, mod.

Intended Usage: For the selective isolation of gram-positive cocci, *Enterobacteriaceae* and *Acinetobacter* species.

For professional use only.

	PB5224E
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Thermo Scientific™ Columbia CNA Aesculin Selective Agar / MacConkey Agar No. 3, mod.

Form of Product	Poured plate
Storage	2 – 12°C, dark
Filling weight	17 g ± 5 %
Packaging	10 biplates wrapped in film
pH	
Col CNA aesculin sel. agar	7.2 ± 0.2
MacConkey Agar No. 3 mod	7.1 ± 0.2
Appearance	
Col CNA aesculin sel. agar	Flame red, opaque
MacConkey Agar No. 3 mod	Antique pink, transparent
Shelf life	10 weeks
Intended Usage	For the selective isolation of gram-positive cocci, *Enterobacteriaceae* and *Acinetobacter* species. For professional use only.
Technique	Depends on the different methods. For information see product information.

Typical formulation* Side 1 – Columbia CNA Aesculin Selective Agar	**g/l**
Special peptone	23.0
Starch	1.0
Sodium chloride	5.0
Nalidixic acid	0.005
Colistin	0.0075
Aesculin	1.0
Agar	10.0
Defibrinated Sheep Blood	50.0 ml

* Adjusted as required to meet performance standards.

Typical formulation* Side 2 – MacConkey Agar No. 3 mod	**g/l**
Peptone	20.0
Lactose	10.0
Bile Salts	1.5
Sodium chloride	5.0
Neutral red	0.03
Crystal violet	0.001
Agar	15.0

*Adjusted as required to meet performance standards.

Quality Control

1. Control for general characteristics, labelling and printing.

2. Contamination check
   ≥ 72 h @ 20 – 25 °C, aerobic
   ≥ 72 h @ 30 – 35 °C, aerobic

3. Microbiological Control

Side 1 – CNA AESCULIN+SB

Positive Controls	Growth
Inoculum 10^3 –10^4 colony forming units (cfu), qualitative, control medium COL+SB Incubation conditions: 24 h @ 36 ± 1°C, aerobic	
Enterococcus faecalis ATCC® 29212™	Small grey colonies, aesculin positive.
Streptococcus agalactiae ATCC® 13813™	Small grey colonies, aesculin negative.
Staphylococcus aureus ATCC® 25923™	Good growth, white shiny colonies.

Negative Control	Growth
Inoculum 10^4 – 10^5 cfu, qualitative, control medium COL+SB Incubation conditions: 24 h @ 36 ± 1°C, aerobic	
Escherichia coli ATCC® 25922™	No growth.

Side 2 – MACCONKEY3 MOD

Positive Controls	Growth
Inoculum 10^3 –10^4 cfu, qualitative, control medium COL+SB Incubation conditions: 24 h @ 36 ± 1°C, aerobic	
Acinetobacter baumannii ATCC® 19606™	Brownish, shiny colonies.
Escherichia coli ATCC® 25922™	Pink colonies and bile precipitation.

Negative Control	Growth
Inoculum 10^4 – 10^5 cfu, qualitative, control medium COL+SB Incubation conditions: 24 h @ 36 ± 1°C, aerobic	
Enterococcus faecalis ATCC® 29212™	No growth.

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Description

The combination of agar for detection of gram-positive cocci and *Enterobacteriaceae* is currently used in many laboratories as the standard for various investigation materials. The use of aesculin in Columbia CNA aesculin selective agar as well as a simple, rapid PYR Test (ID0570M) allows the preliminary identification of enterococci. Enterococci are PYRase positive and hydrolyse aesculin to aesculetin (dark halo around the colonies under UV light (366nm). The bile salt mixture in the MacConkey agar no. 3 was modified to allow the growth of *Acinetobacter* spp. as well. *Acinetobacter* spp. have been isolated in connection with community-acquired and nosocomial pneumonias, urogenital tract, eye and soft tissue infections and are difficult to treat particularly due to their broad antibiotic resistance.

Technique

1. Inoculate the investigation material on both agars in parallel.
2. Incubate dishes for 18 – 24 hours at 36 ± 1 °C.

Characteristic Colony Morphology

Columbia CNA Aesculin selective agar:
Staphylococci grow as large white-grey or cream-yellow coloured colonies with or without haemolysis. Streptococci and enterococci grow as small white to greyish colonies with α-, ß- or without haemolysis. Under UV light (366nm), aesculin-splitting colonies are surrounded by a dark halo.

MacConkey agar no. 3 modified:
Lactose-positive *Enterobacteriaceae* grow as pink-coloured to red-violet colonies that, in the case of *E. coli*, are surrounded by a same-coloured bile salt precipitation zone. Lactose-negative *Enterobacteriaceae* and *Acinetobacter* spp. grow as colourless to brownish, glossy-moist colonies. Gram-positive cocci are generally completely supressed.