Condalab

Reference: 0900 **Technical Data Sheet**

Product: CE IVD

MACCONKEY AGAR (MACCONKEY AGAR N°3)

Specification

Selective and differential medium used in the detection, isolation and enumeration of *Salmonella* and coliforms in clinical specimens according to the Pharmacopoeial Harmonized Methodology and in foodstuffs specimens according to ISO standard 21150.

Presentation

	Packaging Details	Shelf Life	Storage
20 Prepared Plates 90 mm with: 21 ± 2 ml	1 box with 2 packs of 10 plates/pack. Single cellophane.	3 months	2-14°C

Composition

Composition (g/l):

Gelatin Peptone	17.0
Casein and Meat Peptone	3.00
Lactose	10.0
Bile Salts	1.50
Sodium chloride	5.00
Crystal violet	0.001
Neutral red	0.03
Agar	15.0

Description /Technique

Description

At the beginning of the last century, MacConkey made the original formulation and included ox bile as inhibitor of Gram positive bacteria and litmus as an indicator of acid production from lactose sugar. More recently litmus has been substituted by a phenol red indicator making interpretations easier and more precise. Advancements in the understanding of bacterial physiology has meant that the medium has now been adapted to facilitate the detection of coliforms. The two most significant modifications to the original formulation are as follows:

- The substitution of ox bile by purified bile salts that improves the selectivity and avoids the inherent turbidity, which is due to the fat composition of bile. The efficiency of the inhibition due to bile salts is variable and depends on the relative concentration of cholate and taurocholate.
- The inclusion of supplementary inhibitors such as crystal violet and/or brilliant green. A popular formulation in America, but not in Europe where lower selectivity is preferred.
- Lactose positive bacteria grown on this medium form red colonies due to acid production resulting form lactose fermentation and thus Escherichia coli colonies can be easily distinguished as they also form a small precipitation zone of bile salts around them. Some enterococci may also grow, but they are easy to distinguish from coliforms, as they form smaller colonies and have no precipitation zone.

Technique

For plate inoculation follow the laboratories standard methods or the applicable norms (spiral plating method, econometric methods, streak plating, dilution banks, spread plating with drigralsky rod etc ...)

For enumeration, after an incubation of 24 hours at 35°C, select plates with 30-150 colonies. The characteristic colonies must be confirmed as coliforms by gas production from lactose in a broth culture.

Quality control

Physical/Chemical control

Color : Violet-pink pH: 7.1 ± 0.2 at 25°C

Microbiological control

Growth Promotion Test according to harmonized pharmacopoeial monographs and test methods & ISO 11133:2014
Inoculate: Practical range 100 ± 20 CFU; Min. 50 CFU (Productivity)/ 10^4-10^6 (Selectivity).
Aerobiosis. Incubation at 30-35°C. Reading at 18-72h

Microorganism	Growth
Enterococcus faecalis ATCC® 19433, WDCM 00009	Inhibited
Staphylococcus aureus ATCC® 6538, WDCM 00032	Inhibited
Escherichia coli ATCC® 8739, WDCM 00012	Good - Red purple colonies - Biliar precipitate
Escherichia coli ATCC® 25922, WDCM 00013	Good - Red purple colonies - Biliar precipitate
Salmonella typhimurium ATCC® 14028, WDCM 00031	Good -colourless colonies w/o precipitate
Ps. aeruginosa ATCC® 9027, WDCM 00026	Colourless colonies without biliar precipitate

Sterility Control

Incubation 48 hours at 30-35°C and 48 hours at 20-25°C: NO GROWTH
Check at 7 days after incubation in same conditions

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