Reference: 250641ZA **Technical Data Sheet**

Product: **MacCONKEY AGAR (Eur. Pharm.)**

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
30 Contact Plates Contact Plates - Double Wrapping with: 15 ± 2 ml	1 box with 5 blisters (PET laminated and PPBO bag) with 6 contact plates/blister.	7 months	2-25 ºC

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	13,5

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:

Contact plates are used in the microbiological control of disinfection and cleaning of surfaces. It acts simultaneously as a sampler and incubation culture medium without the need for any other intermediate steps.
The plates come in a form appropriate for this function and can be used with different culture media depending on the type of microbe that needs to be controlled. On average the plates provide a contact surface of approximately 25 cm2.
To use, remove the cover and gently press the culture medium on the surface to be controlled, ensuring contact between the two surfaces. The Contact plate is removed and covered with the lid to prevent air contamination. It is advisable that the lid is secured with adhesive tape and the bottom labelled with the sampling data (place, date and time).
If the sample surfaces are rough, the contact plates will not make good contact, even when the pressure is increased. In these cases it is advisable to delineate an sample surface area of 25 cm squared and rub this area vigorously with a wet sterile swab and then rub the swab over the Contact plate.
If verifying the effectiveness of a cleaning or disinfection process, contact plates should be used within two hours after the end of the process, ensuring that the sample surface is dry. It is advisable to always include positive controls, sampling the area before disinfection or dirty areas beside the disinfected area.
The technician will determine the frequency of sampling and disinfection according to performance criteria. Apply the agar directly onto surface to be monitored ensuring that the pressure is distributed over the whole plate for 10 seconds. Clean the surface where the sample was collected in order to remove any traces of agar.
The inoculated plates are incubated at 30-35 º C for 18-72 hours and examined daily.
Note: Contact plates are used for monitoring the microbiological contamination of surface and air inside cleanrooms, isolators, RABS, food industries and hospitals. The double/triple irradiated wrapping ensures that the package itself doesn't contaminate the environment as the first wrapper is removed just before entering the clean area.

The plates must be kept in their original packaging (blisters) to guarantee their stability at the end of their expiration date.

Quality control

Physical/Chemical control

Color : Pink pH: 7.1 ± 0.2 at 25ºC

Microbiological control

Inoculate: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10^4-10^6 (selectivity) and <100 UFC (specificity-PhEur) and ≥10^3 UFC (specificity-ISO).
Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 30-35ºC. Reading at 18-72h

S. sonnei incubation at 37°C for 20-24h

Microorganism	Growth
Staphylococcus aureus ATCC® 6538, WDCM 00032	Inhibited
Escherichia coli ATCC® 8739, WDCM 00012	Good (≥ 50%) - Red purple colonies - Biliar precipitate
Escherichia coli ATCC® 25922, WDCM 00013	Good (≥ 50%) - Red purple colonies - Biliar precipitate
Salmonella typhimurium ATCC® 14028, WDCM 00031	Good (≥ 50%) -colourless colonies w/o precipitate
Ps. aeruginosa ATCC® 9027, WDCM 00026	Colourless colonies without biliar precipitate
Shigella sonnei ATCC® 9290	Good -colourless colonies w/o precipitate

Sterility Control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

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