

## Specification

Selective and differential medium used in the detection, isolation and enumeration of *Salmonella* and coliforms according to the Pharmacopoeial Harmonized Methodology

## Presentation

20 Prepared Plates  
90 mm  
with: 21 ± 2 ml

### Packaging Details

1 box with 2 packs of 10 plates/pack. Single BOPP film. With desiccant.  
LATERAL LABELLING

### Shelf Life

6 months

### Storage

15-25 °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.....                    | 13,5  |

## Description /Technique

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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 from 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 50-100 CFU according to harmonized Pharmacopoeia monographs (EP) and test methods & ISO 11133:2014/A1:2018

Inoculate: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10<sup>4</sup>-10<sup>6</sup> (selectivity) and <100 UFC (specificity-PhEur) and ≥10<sup>3</sup> UFC (specificity-ISO).

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 30-35°C. Reading at 18-72h

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

### Microorganism

*Enterococcus faecalis* ATCC® 19433, WDCM 00009

*Staphylococcus aureus* ATCC® 6538, WDCM 00032

*Escherichia coli* ATCC® 8739, WDCM 00012

*Escherichia coli* ATCC® 25922, WDCM 00013

*Salmonella typhimurium* ATCC® 14028, WDCM 00031

*Ps. aeruginosa* ATCC® 9027, WDCM 00026

*Shigella sonnei* ATCC® 9290

### Growth

Inhibited

Inhibited

Good (≥ 50%) - Red purple colonies - Biliar precipitate

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Good (≥ 50%) -colourless colonies w/o precipitate

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Good -colourless colonies w/o precipitate

### Sterility control

Incubation 48 h at 30-35 °C and 48 h at 20-25 °C: NO GROWTH.

Check at 7 days after incubation in same conditions.

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