

# TECHNICAL DATA SHEET

Article No. 9452

MacConkey Agar no. 3, prepared plates

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## SYNONYMS

MacConkey G Broth, Medium G

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## SPECIFICATION

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

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

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## COMPOSITION IN G/L

Gelatin peptone	17.000
Casein and meat peptone	3.000
Lactose	10.000
Bile salts	1.500
Sodium chloride	5.000
Crystal violet	0.001
Neutral red	0.030
Agar	15.000

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## PACKAGING DETAILS

### 9452-20PLATES

20 prepared plates 90 mm

Content: 21 ±2 ml

Packaging unit: 1 box with 2 packs of 10 plates/pack. Single cellophane.



## GUIDELINES

### 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 fermentation. More recently, litmus has been substituted by a phenol red indicator, making interpretations easier and more precise. Due to improvements in understanding of bacterial physiology, the medium has 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 improves the selectivity and avoids 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 method, dilution banks, spread plating with Drigalsky rod etc.).

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

## MICROBIOLOGICAL CONTROL

Growth Promotion Test 50-100 CFU acc. to harmonized pharmacopoeial monographs 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).

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

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

Microorganism	Growth
<i>Enterococcus faecalis</i> ATCC® 19433, WDCM 00009	Inhibited
<i>Staphylococcus aureus</i> ATCC® 25923, WDCM 00034	Inhibited
<i>Escherichia coli</i> ATCC® 8739, WDCM 00012	Good (≥50 %) - red purple colonies, biliar precipitate
<i>Escherichia coli</i> ATCC® 25922, WDCM 00013	Good (≥50 %) - red purple colonies, biliar precipitate
<i>Salmonella typhimurium</i> ATCC® 14028, WDCM 00031	Good (≥50 %) - colorless colonies w/o precipitate
<i>P. aeruginosa</i> ATCC® 9027, WDCM 00026	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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## STORAGE

2-14 °C

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## SHELF LIFE

3 months

