TECHNICAL DATA SHEET

COMPASS® *SALMONELLA* AGAR

DETECTION OF *SALMONELLA*

1 INTENDED USE

COMPASS® *Salmonella* Agar is a selective medium allowing the isolation and differentiation of bacteria belonging to the genus *Salmonella.*
It can be used as the second medium in all normalized and validated methods for the detection of *Salmonella.*

COMPASS® *Salmonella* Agar is also used in the context of the rapid alternative method for the detection of *Salmonella* (**SESAME *Salmonella* TEST®**).

2 HISTORY

At the beginning of the 1990's, several authors demonstrated that the majority of *Salmonella* strains of all species and serotypes were capable of cleaving esters of 7 to 10 carbon atom fatty acids. The esterase, particularly active on caprylate derivatives, was detected through the use of synthetic fluorogenic and chromogenic substrates. However, their hydrophobic nature prevented incorporation into agar media. As a result, droplet testing for fluorescence was applied to colonies on isolation media: Hektoen, SS, XLD, etc. In 1997, a new culture medium formulation was devised to incorporate hydrophobic chromogenic substrates into aqueous media in such a way as to obtain homogeneous and stable agar media, therefore enabling direct detection of *Salmonella* esterase on culture media. Other bacteria lacking esterase and/or possessing a β-glucosidase enzyme were detected with a second chromogenic substrate are thus distinguishable from *Salmonella*.

3 PRINCIPLES

COMPASS® *Salmonella* Agar combines two chromogenic substrates in order to detect two enzyme activities:

- 5-bromo-6-chloro-3-indolyl-caprylate (Magenta-caprylate) allows the detection of the esterase enzyme. Degraded by *Salmonella*, this enzyme leads to the formation of a red-violet (magenta) precipitate within the colony.
- 5-bromo-4-chloro-3-indolyl-β-D-glucopyranoside (X-glucoside) is also used for which the cleavage product is a blue precipitate.

Simultaneous detection of both activities allows for a coloration of *Salmonella* in distinct contrast to that of other bacteria. Studies have demonstrated the enhanced specificity for *Salmonella* detection using this method, including atypical serotypes which can cause confusion on other media. The detection of *Salmonella* Typhi and Paratyphi, lactose positive *Salmonella* (*S.* Seftenberg and sub-species *arizonae* and *diarizonae*), sucrose-positive and non-motile serotypes (*S.* Pullorum and Gallinarum) is assured with this medium.

Selective agents inhibit Gram-positive and several Gram-negative species.

The nutrient base favors the recovery and growth of *Salmonella.*

4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media medium:

- Peptone ..... 10,00 g
- Sodium chloride ..... 5,00 g
- Phosphate buffer..... 7,00 g
- Inhibitory agents..... 9,00 g
- Chromogenic mixture ..... 1,40 g
- Bacteriological agar..... 15,00 g

pH of the ready-to-use media medium at 25 °C: 7,0 ± 0,2.

5 INSTRUCTIONS FOR USE

Detection

- Surface inoculate by streaking from a selective enrichment medium used for the detection of *Salmonella*.
- Incubate at 37 ± 1 °C for 24 ± 3 hours.

✓ **Inoculation:**
Surface plating

✓ **Incubation:**
24 ± 3 h at 37 °C

Note:
For organizational reasons within the laboratory, it is possible to incubate the plates for up to 48 hours.

Confirmation - SESAME *Salmonella* TEST® method

- Sample a fraction of the outside edge of the migration zone obtained on SESAME *Salmonella* Detection and streak onto the surface of COMPASS® *Salmonella* Agar.
- Incubate at 37 ± 1 °C for 24 ± 3 hours.

6 RESULTS

The colonies have the following appearance:

Microorganisms	Characteristic colonies
Salmonella spp. (including *Salmonella* Typhi, Paratyphi, lactose-positive, saccharose-positive)	Magenta
Escherichia coli	White
Enterobacter spp., *Klebsiella* spp.	Blue-green
Proteus spp.	Transparent to brownish
Pseudomonas spp. et Gram positive bacteria	Inhibited

See ANNEX 1: PHOTO SUPPORT.

Notes:
Rare strains of *Enterobacter* and *Pseudomonas* can express an esterase activity and produce magenta colonies. Certain strains of serovars Dublin & Atento, as well as some from the subspecies *S. houtenae*, *S. bongori* & *S. diarizonae*, can present a weak to null magenta pigmentation, resulting from the weak esterase activity that characterizes these strains.

7 QUALITY CONTROL

Prepared media in plates: amber agar.

Typical culture response after 24 hours of incubation at 37°C, qualitative method of inoculation

Microorganisms		Growth	Characteristics
Salmonella Typhimurium	WDCM 00031	Good, score 2	Magenta colonies
Salmonella Enteritidis	WDCM 00030	Good, score 2	Magenta colonies
Enterobacter aerogenes	WDCM 00175	Good, score 2	Blue colonies
Escherichia coli	WDCM 00013	Good, score 1 to 2	White colonies
Pseudomonas aeruginosa	WDCM 00024	Inhibited, score 0	-
Staphylococcus aureus	WDCM 00034	Inhibited, score 0	-

8 STORAGE / SHELF LIFE

Pre-poured media in plates: 2-8 °C.
The expiration date is indicated on the label.

9 PACKAGING

Pre-poured media in Petri plates (Ø 90 mm):

20 plates BM06608
120 plates BM23008

10 BIBLIOGRAPHY

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11 ADDITIONAL INFORMATION

COMPASS® is a registered trademark of SOLABIA S.A.S.

The information provided on the labels take precedence over the formulations or instructions described in this document and are subject to change at any time, without warning.

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COMPASS® *Salmonella* Agar

Detection of *Salmonella* spp..

Results :

Growth obtained after 24 hours of incubation at 37 °C.