Condalab

**Reference:** 4712 **Technical Data Sheet**

**Product:** **SPS AGAR**

## Specification

Solid medium for the detection of *Clostridium perfringens* in water and fodd samples.

## Presentation

| | Packaging Details | Shelf Life | Storage |
|---|---|---|---|
| 30 Prepared Plates<br>55 mm Plates for filtration purposes<br>with: 9 ± 1 ml | 1 box containing: 5 plastic bags with 6 plates of 55 mm/ bag. | 6 months | 2-25°C |

## Composition

Composición (g/l):

| | |
|---|---|
| Sodium sulfite | 0.50 |
| Polymixin B sulfate | 0.01 |
| Sodium Sulfadiazine | 0.12 |
| Yeast Extract | 10.0 |
| Iron(III) Citrate | 0.50 |
| Casein Peptone | 15.00 |
| Agar | 13.90 |

## Description /Technique

Description

SPS Agar (Sulfite Polymyxin Sulfadiazine) is a modification of the original Wilson & Blair medium for the detection of clostridia. The present medium betters the formulation of Mossel and also the later modification of Angelotti et al.. It achieves a higher selectivity for C. perfringens with the addition of Sulfadiazine and Polymyxin.
The differential system consists of sodium sulfite and ferric citrate which allows the detection of sulfite reducing organisms, which form black colonies due to ferrous sulfide precipitate.

Technique

The usual technique for the use of this medium is as follows:
Collect, dilute and prepare samples and volumes to be filtered as required according to specifications, directives, official standard regulations and/or expected results.
Filter the sample through a 0.45 m pore membrane and apply it onto the surface of the agar SPS.

Incubate the plates anerobically at 35+/- 2°C for 24-48h. If a more selective culture medium is desired to incubate at 44 ° C ± 1

(Incubation times greater than those mentioned above or different incubation temperatures may be required depending on the sample, on the specifications,...)

After incubation, enumerate all the colonies that have appeared onto the surface of the membrane.
After incubation, enumerate the colonies with a black iron sulfida precipitate.
90% of the black colonies which are formed can usually be attributed to Clostridium perfringens.
Since the medium is not extremely selective, it is advisable to verify black colonies by checking that they are Gram positive sporulated non-motile organisms incapable of reducing nitrates to nitrites.
Most clostridia are sulfite reducers. Among them are C. perfringens and C. botulinum which along with C. bifermentans are the species most frequently involved in food poisoning.

## Quality control

**Physical/Chemical control**

Color : Straw-coloured yellow pH: 7 ± 0.2 at 25°C

**Microbiological control**

Membrane Filtration /Practical range 100±20 CFU; Min. 50 CFU (Productivity)./$10^4$-$10^6$ CFU for Selectivity.
Anaerobiosis. Incubation at 35 ± 2.5°C, reading after 24-48 hours

| Microorganism | Growth |
|---|---|
| *Clostridium perfringens ATCC® 13124, WDCM 00007, NCTC® 8237* | Good - $H_2S$ positive . Black colonies |
| *Clostridium perfringens ATCC® 10543, WDCM 00174* | Good - $H_2S$ positive . Black colonies |
| *Escherichia coli ATCC® 8739, WDCM 00012* | Inhibited |

**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

## Bibliography

· ANGELOTTI, HALL, FOSTER & LEWIS (1962) Quantisation of *Clostridium perfringens* in foods. Appl. Microbiol., 10:193.

· DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods. 4th ed., APHA. Washington.

· F.D.A. (1998) Bacteriological Analytical Manual. 8th ed. Rev. A., AOAC International. Gaithersburg. MD.

. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.

· MOSSEL, D.A.A. (1959) Enumeration of sulfite-reducing bacteria occurring in foods. J. Sci. Food Agric. 19:662.