

Specification

Differential and selective solid medium for the isolation of *Salmonella* and some *Shigella* species from clinical specimens, foods, etc.

Presentation

10 Prepared bottle
 Bottle 125 ml
 with: 100 ± 3 ml

Packaging Details

1 box with 10 bottles 125 ml. Injectable cap: Plastic screw inner cap. The use of syringes needles with a diameter greater than 0.8 mm is not recommended.

Shelf Life

12 months

Storage

8-25 °C

Composition

Composition (g/l):

Meat extract.....	5.00000
Peptone.....	5.00000
Lactose.....	10.00000
Bile salts.....	5.60000
Sodium citrate.....	10.00000
Sodium thiosulfate.....	8.50000
Ferric citrate.....	1.00000
Brilliant green.....	0.00033
Neutral red.....	0.02500
Agar.....	15.00000

Description /Technique

Description:

SS Agar is a highly selective agar used for the isolation of *Salmonella* and *Shigella* species from very contaminated samples.

Selectivity is obtained by a high concentration of bile salts and brilliant green, which inhibits the growth of Gram positive bacteria. The growth of other Gram negative flora is highly repressed due to the presence of citrate and thiosulfate. Some coliforms may still grow on this medium. Differentiation between pathogenic species and coliforms is achieved by the colour change of the pH indicator (neutral red). Lactose fermenters produce a pink or red coloured medium and colonies, while non- fermenting species form colourless colonies and turn the medium yellow. Should any species produce H₂S, it is easily detected by the black precipitate of ferrous sulfide, which turn the colonies black.

The peptone and the meat extract are capable of inducing the growth of most pathogenic species, nevertheless some *Shigella* are very fastidious and may grow poorly.

Technique:

Melt the medium contained in the bottles in a water bath, avoid overheating, pour into Petri dishes when cooled to room temperature.

Once solidified on a flat surface,

If it is suspected that organisms might have been damaged and the viability of the microorganisms is poor i.e. (processed food, faeces from the patients under antibiotic treatment, etc.) it is advisable to proceed with a prior enrichment in Selenite-Cystine Broth Base or Tetrathionate Broth Base. After enrichment, inoculate SS Agar plates heavily with the specimen and proceed in the same way as with other specimens on a less selective medium, such as Brilliant Green Agar or MacConkey Agar.

Incubate the inoculated plates at 37°C for 18-24 hours. The presumptive colonies should then be sub-cultured on differential media to be identified biochemically or serologically.

Appearance of the colonies after 24 hours on SS Agar:

- *Shigella*: Colourless, transparent and flat.
- *Salmonella* (Non H₂S producers): Colourless, transparent and flat.
- *Salmonella* (H₂S producers): Black or black centred, flat, with transparent borders.
- *Proteus*: Similar appearance as *Salmonella* colonies, but smaller in size.
- *Escherichia coli*: If they grow, they are small, convex and pink or red coloured.
- Coliforms (in general): Large, opaque, smooth and white or pink in colour.

Each laboratory must evaluate the results according to their specifications.

Note: The solid mediums can be melted in different ways: autoclave, bath and, if the customer considers appropriate, also the microwave. Whenever the microwave option is chosen, it is necessary to take certain safety measures to avoid breaking of the containers, such as loosening the screw cap and putting the bottle or tube in a water bath in the microwave. The fusion temperature and time will depend on the shape of the container, the volume of medium and the heat source. Avoid overheating as both the heating periods.

Quality control**Physical/Chemical control**

Color : Pink

pH: 6.9 ± 0.2 at 25°C**Microbiological control**Melt the medium and inoculate 10^3 - 10^4 CFU (Productivity test qualitative)/ 10^4 - 10^6 CFU (Selectivity)

Microbiological control according to ISO 11133:2014/A1:2018.

Aerobiosis. Incubation at 37 ± 1 °C, reading after 21 ± 3 h**Microorganism***Salmonella enterica* ATCC® 13076, WDCM 00030*Salmonella typhimurium* ATCC® 14028, WDCM 00031*Shigella flexneri* ATCC® 12022, WDCM 00126*Escherichia coli* ATCC® 25922, WDCM 00013*Enterococcus faecalis* ATCC® 29212, WDCM 00087**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.

Growth

Good. Colonies SH2 positive

Good. Colonies SH2 positive

Good. Colourless colonies w/o SH2

Inhibited

Partial Inhibition

Bibliography

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