

### Specification

Moderately selective solid medium used for the detection of coliforms and other enteric organisms, in milk and water, according to APHA specifications.

### Formula \* in g/L

|                                      |      |
|--------------------------------------|------|
| Peptone.....                         | 10,0 |
| Lactose.....                         | 10,0 |
| Sodium sulfite.....                  | 2,5  |
| Di-potassium hydrogen phosphate..... | 3,5  |
| Agar.....                            | 15,0 |

Final pH 7,2 ±0,2 at 25 °C

\* Adjusted and /or supplemented as required to meet performance criteria

### Directions

Suspend 41 g of powder in 1 L of distilled water. Add 20 ml Basic Fuchsin Solution 2,5%. Boil until completely dissolved. Distribute containers and sterilize in the autoclave 15 minutes at 121 ° C. Mix thoroughly and pour plates.

Note:the addition of the solution before autoclaving, favors complete dissolution.

After autoclaving the medium must appear slightly pinkish. If the colour is a very intense red, it can be decolourised by adding a few drops of a sterile solution of sodium sulfite 10% before pouring it into the plates. Medium must be freshly prepared for use, and must not be used when it is red.

### Description

Endo Agar is used to confirm the detection of and to count coliform bacteria following the testing of drinking water, as well as for the detection and isolation of coliforms and faecal coliforms from milk, dairy products and other food-stuffs.

The moderate selectivity is due to the formation of a fuchsine-sulfite compound. This compound reacts with the acetaldehyde formed in the lactose fermentation and frees the fuchsin dye that colours the bacterial colony. The strains that produce large amounts of the metabolite, like *E. coli*, can crystallize the fuchsin on the colony, giving rise to characteristic green metallic shine. Inoculate the plates by the streak-plate method and incubate for 24 hours at 37°C. Colonies of coliform, which ferment lactose, are pink to pale red, with or without green metallic sheen: marked reddening of the medium may occur. Colonies of other enteric bacilli, including *Salmonella* and of non-lactose-fermenters are about the same colour as the medium, being almost colourless to faint pink.

**Caution:** On exposure to oxygen, the plated medium gradually becomes red due to the oxidation of sulfite and can thus no longer be used. It can only be kept for a few days even if it is stored in the dark and at refrigerator temperature.

### Quality control

**Incubation temperature:** 36°C ±2,0 /44,5 °C      **Incubation time:** 21±3 h

**Inoculum:** Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10<sup>4</sup>-10<sup>6</sup> CFU (selectivity)/ ≥ 10<sup>3</sup> CFU (specificity), according to ISO 11133:2014/Amd 1:2018.

### Microorganism

### Growth

### Remarks

|   |                     |  |
|---|---------------------|--|
| <i>Enterococcus faecalis</i> ATCC® 29212  | Inhibited           | Selectivity                                  |
| <i>Escherichia coli</i> ATCC® 8739        | Productivity > 0.50 | Pink-red colonies w. green metallic shine    |
| <i>Escherichia coli</i> ATCC® 25922       | Productivity > 0.50 | Pink-red colonies w. green metallic shine    |
| <i>Salmonella typhimurium</i> ATCC® 14028 | Good (specificity)  | Colourless colonies w/o green metallic shine |
| <i>Salmonella abony</i> NCTC® 6017        | Good (specificity)  | Colourless colonies w/o green metallic shine |
| <i>Escherichia coli</i> ATCC® 25922       | Productivity > 0.50 | Pink-red colonies w. green metallic shine    |

### References

- APHA/AWWA/WEF (1985) Standard Methods for the examination of water and wastewater. 15th ed. APHA Washington. DC. USA.
- APHA (1967) Standard methods for the examination of dairy products. 12th ed. APHA Washington. DC. USA.
- ATLAS, R.M. (1995) Handbook of Microbiological Media for the Examination of Food. CRC Press. Boca Raton. Fla. USA.
- ATLAS, R.M. & R.C. PARKS (1993) Handbook of Microbiological Media. CRC Press. London.
- ENDO, S. (1904) Über ein verfahren zum Nachweis von typhusbazillen. Zbl. Bakt. Hyg. Abt. I Orig. 35:109.
- ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- WINDLE TAYLOR, E. (1958) The examination of water and water supplies. 7th ed. Churchill Ltd. London.

### Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 °C to 30 °C).