

## Technical Data Sheet

### ENDO Agar

Ordering number: 1.04044.0500

Selective culture medium for the detection and isolation of E. coli and coliform bacteria in various materials according to ENDO (1904)

#### Mode of Action

Sodium sulfite and fuchsin inhibit the growth of gram-positive bacteria. E. coli and coliform bacteria metabolize lactose with the production of aldehyde and acid. The aldehyde liberates fuchsin from the fuchsin-sulfite compound, the fuchsin then colours the colonies red. In the case of E. coli, this reaction is so intense that the fuchsin crystallizes out giving the colonies a permanent greenish metallic sheen (fuchsin sheen). Lactose-negative and weakly lactose-positive E. coli do not show any fuchsin sheen.

#### Typical Composition (g/L)

| ENDO Agar                       |      |
|---------------------------------|------|
| Peptones                        | 10.0 |
| di-Potassium hydrogen phosphate | 2.5  |
| Lactose                         | 10.0 |
| Sodium sulfite, anhydrous       | 3.3  |
| Pararosanilin (fuchsin)         | 0.3  |
| Agar-agar**                     | 12.5 |

\*\*Agar-agar is equivalent to other different terms of agar.

## Preparation

Suspend 39 g/litre, autoclave (15 min at 121 °C), pour plates.

The plates are clear and pale pink.

If the culture medium is somewhat to red after it has solidified, the red colouration can be removed by adding a few drops (max. 1 ml/litre) of a freshly prepared 10 % sodium sulfite solution and then boiling.

pH: 7.4 ± 0.2 at 25 °C.

On exposure to oxygen the plated culture 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.

## Experimental Procedure and Evaluation

Inoculate the plates by the streak-plate method.

Incubation: 24 hours at 35 °C aerobically.

| Appearance of Colonies                | Microorganisms                                   |
|---------------------------------------|--|
| Red                                   | Lactose-positive:                                |
| Red with a permanent metallic sheen   | Escherichia coli                                 |
| Red to reddish, hemispherical, mucoid | Enterobacter aerogenes,<br>Klebsiella and others |
| Colourless, clear                     | Lactose-negative                                 |

## Quality Control

| Control strains                                | Growth            | Red colonies | Metallic lustre |
|--|-------------------|--------------|-----------------|
| Escherichia coli ATCC 25922 (WDCM 00013)       | good to very good | +            | +               |
| Escherichia coli 194                           | good to very good | +            | +               |
| Escherichia coli ATCC 11775 (WDCM 00090)       | good to very good | +            | +(poor)         |
| Enterobacter cloacae ATCC 13047 (WDCM 00083)   | good to very good | +(poor)      | - or poor       |
| Klebsiella pneumoniae ATCC 13883 (WDCM 00097)  | good to very good | +            | -               |
| Salmonella typhimurium ATCC 14028 (WDCM 00031) | good to very good | -            | -               |
| Shigella flexneri ATCC 12022 (WDCM 00126)      | good to very good | -            | -               |
| Proteus mirabilis ATCC 14153                   | good to very good | -            | -               |
| Enterococcus faecalis ATCC 11700               | none to fair      |              |                 |

Please refer to the actual batch related Certificate of Analysis.



Escherichia coli 194



Shigella flexneri ATCC 12022

### Literature

American Public Health Association, American Water Works Association and Water Pollution Control Federation: Standard Methods for the Examination of Water and Wastewater, 20th ed., Washington, 1998.

ENDO, S.: Über ein Verfahren zum Nachweis von Typhusbacillen. -Centralbl. Bakt. I. Orig., 35; 109-110 (1904).

### Ordering Information

| Product        | Cat. No.     | Pack size |
|----------------|--------------|-----------|
| ENDO Agar      | 1.04044.0500 | 500 g     |
| Sodium sulfite | 1.06657.0500 | 500 g     |

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