

ENDO Agar

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

This medium complies with the "Standard Methods for the Examination of Water and Wastewater" (1992).

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/litre)

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.

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 too 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	<i>Escherichia coli</i>
Red to reddish, hemispherical, mucoid	<i>Enterobacter aerogenes</i> , <i>Klebsiella</i> and others
Colourless, clear	Lactose-negative

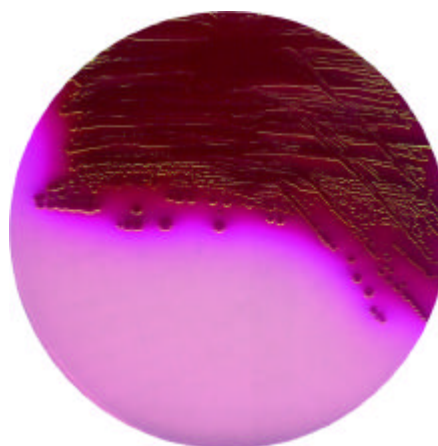
Literature

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	Merck Cat. No.	Pack size
ENDO Agar	1.04044.0500	500 g
Sodium sulfite	1.06657.0500	500 g



Escherichia coli
194



Shigella flexneri
ATCC 12022

ENDO Agar

Quality control

Test strains	Growth	Colour change to red	Metallic sheen
<i>Escherichia coli</i> ATCC 25922	good / very good	+	+
<i>Escherichia coli</i> 194	good / very good	+	+
<i>Escherichia coli</i> ATCC 11775	good / very good	+	+
<i>Enterobacter cloacae</i> ATCC 13047	good / very good	+ (poor)	±
<i>Klebsiella pneumoniae</i> ATCC 13883	good / very good	+	-
<i>Salmonella typhimurium</i> ATCC 14028	good / very good	-	-
<i>Shigella flexneri</i> ATCC 12022	good / very good	-	-
<i>Proteus mirabilis</i> ATCC 14153	good / very good	-	-
<i>Enterococcus faecalis</i> ATCC 11700	none / fair	-	-