

Product Information

44657 ECD MUG Agar (E. coli Direct MUG Agar)

The bile-salt mixture in this E. coli Direct Agar extensively inhibits the non-obligatory intestinal accompanying flora. Fluorescence in the UV and a positive indole test demonstrate the presence of *E. coli* in the colonies.

Composition:

Ingredients	Grams/Litre
Casein peptone	20.0
Lactose	5.0
Sodium chloride	5.0
Bile-salts mixture	1.5
Dipotassium hydrogen phosphate	4.0
Potassium hydrogen phosphate	1.5
Tryptophan	1.0
4-Methylumbelliferyl-β-D-glucuronide	0.07
Agar	15.0

Final pH 7.0 +/- 0.2 (at 25 °C)

Store prepared media below 8 °C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25 °C.

Directions :

Dissolve 53.1 g in 1 litre distilled water. Autoclave at 121 °C for 15 minutes. Cool to 45-50 °C. Mix gently and dispense into sterile Petri dishes or sterile culture tubes.

Check the plates under UV light at about 360-370 nm. Light blue fluorescence indicates the presence of *E. coli*. In addition the indole test can be made with Kovac's reagent (Fluka 60983). Cover a colony with 10-20 µl Kovac's reagent. A change of color to red after 2-10 seconds shows indole formation.

Principle and Interpretation:

Casein peptone provides the nitrogen, Vitamins, amino acids and other essential growth nutrients. Lactose is the fermentable sugar Bile-salts mixture inhibits gram-positive bacteria especially bacilli and faecal Streptococci. Sodium chloride maintains the osmotic balance of the medium. Potassium phosphates control the pH during fermentation of lactose. Tryptophan improves the indole reaction.

β-D-glucuronidase, which is produced by *E. coli*, cleaves 4-Methylumbelliferyl-β-D-glucuronide to 4-methylumbelliferone and glucuronide. The fluorogen 4-methylumbelliferone can be detected under a long wavelength UV lamp. In addition the indole test can be made with Kovac's reagent (Fluka 60983).

Cultural characteristics after 24 hours at 44.5 °C.

Organisms (ATCC)	Growth	Fluorescence	Indole reaction
<i>Escherichia coli</i> (25922)	+++	+ (MUG)	+
<i>Klebsiella pneumoniae</i> (13883)	+++	-	-
<i>Proteus mirabilis</i> (14153)	+++	-	-
<i>Pseudomonas aeruginosa</i> (27853)	+++	+	-
<i>Citrobacter freundii</i> (8090)	+++	-	-
<i>Enterobacter aerogenes</i> (13048)	+++	-	-
<i>Clostridium perfringens</i> (10543)	-/+ (anaerob)	(+)	-

References:

1. Deutsches Bundesgesundheitsamt, Amtliche Sammlung von Untersuchungsverfahren nach § 35 LMBG, Beuth Verlag Berlin, Köln
2. DIN Deutsches Institut für Normung e.V.: Mikrobiologische Fleischuntersuchung, Bestimmung der Escherichia coli, Fluoreszenzoptisches Koloniezählverfahren unter Verwendung von Membranfiltern/Spatelverfahren (Referenzverfahren), DIN 10110
3. Draft International Standard ISO/DIS 6391, Meat and meat products, Enumeration of Escherichia coli-colony-count technique at 44 °C using membranes (1996)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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