

## Product Information

### 44655 ECD Agar (*E. coli* Direct Agar; *Escherichia coli* Direct Agar)

For the selective detection of coliforms and *E. coli* in water, food and other material, and in the membrane filter technique.

#### Composition:

Ingredients	Grams/Litre
Casein peptone (tryptic)	20.0
Yeast extract	5.0
Bile salts	1.5
Disodium hydrogen phosphate	5.0
Potassium dihydrogen phosphate	1.5
Sodium chloride	5.0
Agar	15.0
Final pH 7.2 +/- 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.

Appearance: Faintly yellow colored, homogeneous, free flowing powder.  
Gelling: Firm  
Color and Clarity: Slightly brownish-yellow colored, clear to slightly opalescent gel forms in petri plates.

#### Directions :

Dissolve 53 g in 1 litre distilled water, may add 2vl/l MUG Supplement (18493) and sterilize by autoclaving at 121°C for 15 minutes. Cool to 45-50°C. Mix gently and dispense into sterile Petri dishes or sterile culture tubes.

For further confirmation the indole test can be made with Kovac's reagent (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. Because the casein is tryptic digested it is possible to test the indole reaction. Bile-salt inhibits gram-positive bacteria especially bacilli and faecal Streptococci. Sodium chloride maintains the osmotic balance of the medium. Potassium and sodium phosphates stabilise the pH. Although the medium is complete it is possible to add lactose or glucose in a concentration of 5 g/l as fermentable sugars. The addition of carbohydrate improves the growth of coliforms and *E. coli*.

β-D-glucuronidase, which is produced by *E. coli*, cleaves 4-Methylumbelliferyl-β-D-glucuronide (MUG) 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 (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)	(+)	-
<i>Bacillus cereus</i> (11778)	-		
<i>Streptococcus pyogenes</i> (19615)	-		
<i>Staphylococcus aureus</i> (6538)	-		

References:

1. R.M. Atlas, L.C. Parks, Handbook of Microbiological Media, CRC Press, Boca Raton. Fla. (1993)

**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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