

Technical Data Sheet

EC Medium / Broth with MUG | Cat. No. AS-1215

For Laboratory Use Only

PRODUCT SUMMARY

Product Name	EC Medium / Broth with MUG
Catalog Number	AS-1215
Medium Type	Selective enrichment broth
Target Organisms	<i>Escherichia coli</i> and thermotolerant coliforms
Final pH	6.9 ± 0.2 at 25 °C
Trade Description	Prepared culture media for the development or maintenance of microorganisms

OVERVIEW

EC Broth with MUG (also known as Modified EC Broth with 4-Methylumbelliferyl-β-D-Glucuronide or mEC + MUG Broth) is a selective enrichment liquid medium designed for the presumptive detection, isolation, and enumeration of *Escherichia coli*, particularly β-glucuronidase-positive strains, in water, food, dairy, and environmental samples.

Developed as an enhancement to standard EC Broth (Hajna and Perry, 1951), it incorporates MUG as a fluorogenic substrate that, when hydrolysed by the β-glucuronidase enzyme of most *E. coli* strains, produces bright blue fluorescence under long-wave UV light (366 nm), enabling rapid screening without subculture.

The base formulation uses bile salts for Gram-positive inhibition and lactose for gas production in Durham tubes, supporting Most Probable Number (MPN) workflows under elevated temperature incubation at 44.5 ± 0.2 °C for 24 ± 2 hours.

TYPICAL COMPOSITION (PER LITRE)

Component	Concentration
Pancreatic Digest of Casein (Tryptone)	20.0 g/L
Lactose	5.0 g/L
Bile Salts No. 3	1.12 g/L
Sodium Chloride	5.0 g/L
Dipotassium Phosphate	4.0 g/L
Potassium Dihydrogen Phosphate	1.5 g/L
4-Methylumbelliferyl-β-D-Glucuronide (MUG)	0.05 g/L

APPLICATIONS

- Presumptive detection and enumeration of *E. coli* in recreational water, drinking water, and wastewater.
- Isolation from food matrices such as meat, shellfish, dairy products, and environmental swabs.
- Rapid screening of coliform-positive samples through UV fluorescence, shortening confirmation time.
- Quality control in bottled water and process validation in dairy processing environments.

PREPARATION AND USE

Reconstitution	36.67 g per 1 L purified or distilled water
Sterilisation	Autoclave at 121 °C for 15 minutes
Prepared Appearance	Clear, light amber broth without precipitate
Incubation	44.5 ± 0.2 °C for 24 ± 2 hours
Positive Reaction	Turbidity and gas in Durham tube, with blue fluorescence under 366 nm UV light
Confirmation	Biochemically confirm atypical or non-fluorescent reactions where required

STORAGE AND STABILITY

Dehydrated Medium	Store at 10-30 °C, tightly closed, protected from moisture and light
Prepared Broth	Store at 2-8 °C in sealed tubes; use within 2 weeks
Shelf Life	Typically 3 years from date of manufacture under recommended storage conditions
Discard Criteria	Discard if contaminated, discoloured, precipitated, or turbid prior to inoculation

DISCLAIMER

This technical data sheet is intended for laboratory and industrial microbiology use. End users remain responsible for validating suitability for their intended method, matrix, and quality system.