Rapid Chromogenic Coliform Broth

Intended Use
Rapid Chromogenic Coliform Broth is recommended for detection and confirmation of *Escherichia coli* and total coliforms from water samples using a combination of chromogenic and fluorogenic substrates.

Summary
Rapid Chromogenic Coliform Broth is a modification of Lauryl Sulphate MUG X-Gal Broth described by Manafi and Kneifel. This medium is useful for the detection and confirmation of *Escherichia coli* and total coliforms in water samples on the basis of chromogenic and fluorogenic substrates.

Principle
Special peptone serves as a source of carbon and nitrogen compounds, long chain amino acids, vitamins and other essential growth nutrients. Sorbitol is the fermentable carbohydrate. The phosphate salts provide buffering action for rapid growth of coliforms. Sodium lauryl sulphate makes the medium selective by inhibiting accompanying microflora, especially the Gram-positive organisms.
The fluorogenic substrate is split by enzyme ß-D-glucuronidase specifically found in *Escherichia coli*. The reaction is indicated by the development of a blue fluorescence under UV light. The presence of total coliforms is indicated by blue green colorations due to the cleavage of the chromogenic substrate. IPTG amplifies enzyme synthesis and increases the activity of ß-D-galactosidase. To confirm presence of *E. coli* overlay the medium with Kovac's reagent. The layer turns red within 2 minutes in case of positive reaction.

Formula*
Ingredients	**g/L**
Special Peptone	5.0
Sodium Chloride	5.0
Sorbitol	1.0
Dipotassium Hydrogen Phosphate	2.7
Potassium Dihydrogen Phosphate	2.0
Sodium Lauryl Sulphate	0.1
Chromogenic Substrate	0.08
Fluorogenic Substrate	0.05
IPTG	0.1
Final pH (at 25°C)	6.8 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of specimen
Water samples; Food samples.

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 16.03 g of the powder in 1000 mL purified / distilled water.
2. Heat if necessary, to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Mix well and dispense as desired.

Quality Control

Dehydrated Appearance: Cream to yellow homogeneous free flowing powder.
Prepared Appearance: Light yellow coloured, clear solution having slight precipitate in tubes.
Cultural Response: Cultural characteristics observed after an incubation at 35°C-37°C for 18 - 24 hours.

Organism (ATCC)	Growth	Colour of medium	Fluorescence (under UV)	Indole Reaction
Escherichia coli (25922)	Good	Blue-Green	Positive	Positive reaction
Klebsiella aerogenes (13048)	Good	Blue-Green	Negative	Negative reaction

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

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5. Manafi M. and Kneifel W., (1991), Acta Microbiologica Hungarica 33(3-4):293-304.
6. Manafi M., Kneifel B. and Bascon S., (1991), Microbiol. Rev., 55:335-348.
7. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
8. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
9. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
10. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1
11. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201180050100	Dehydrated Culture Media	100 g
201180050500	Dehydrated Culture Media	500 g